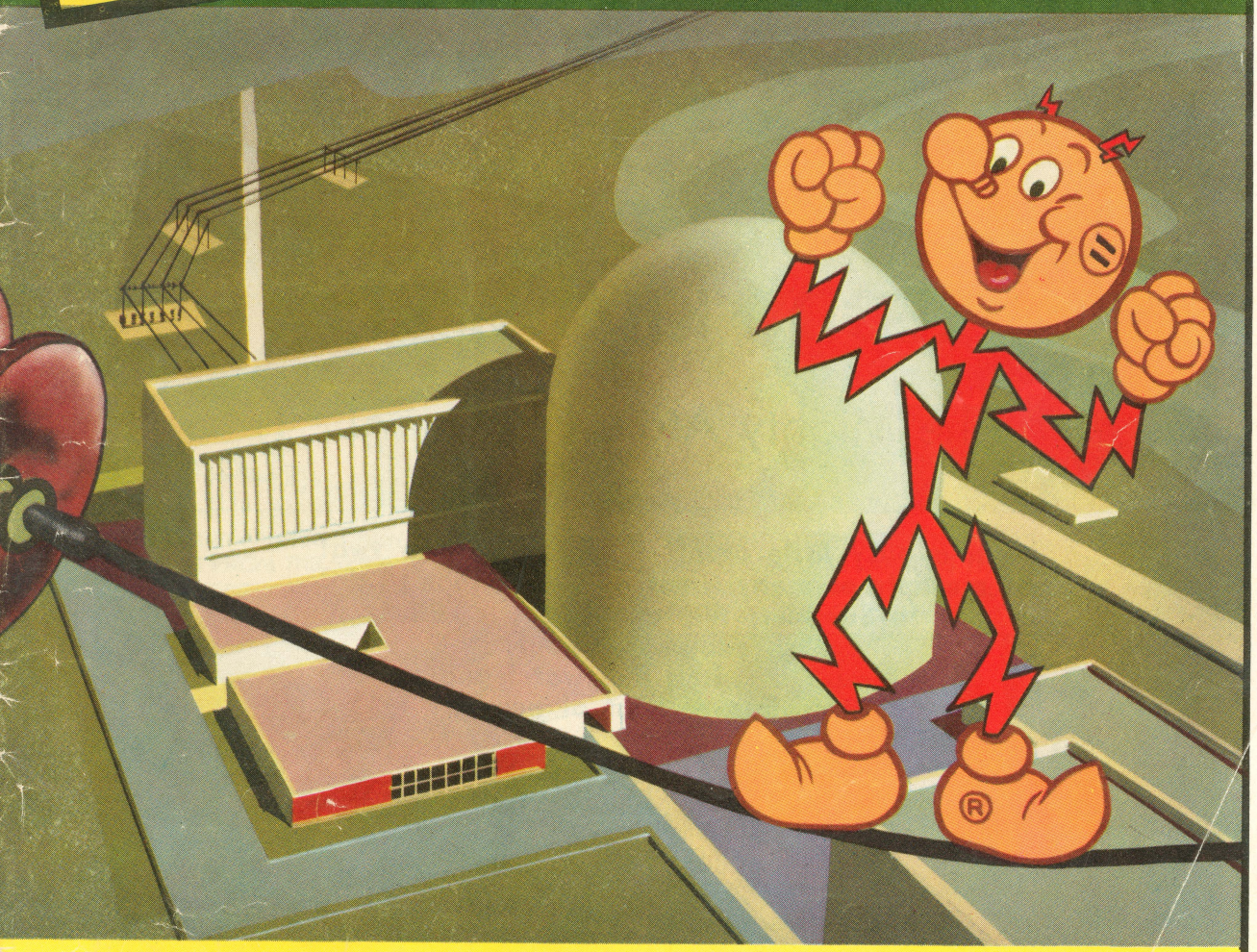
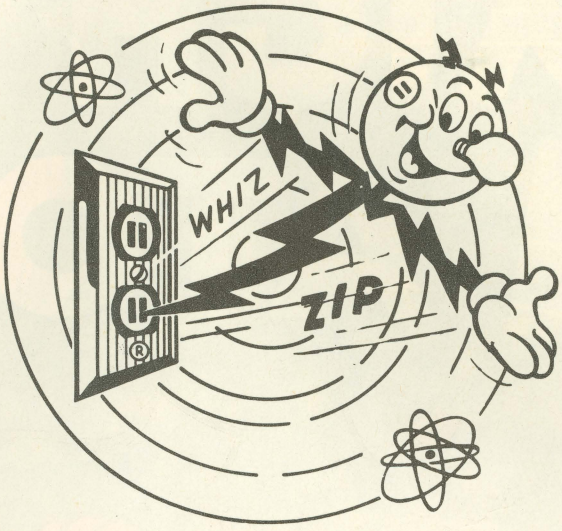
The MIGHTY ATOM

Starring Reddy Kilowatt®



The Story of ELECTRICITY from AMBER to ATOMS



REDDY KILOWATT®

The Mighty Atom *in Person!*

I'm a busy little atom! I split myself in two!
I multiply as many times as I have jobs to do!
In Summer, Winter, Spring or Fall
I'm ready every hour;
Just push a switch and watch me zip
With light or heat or power.

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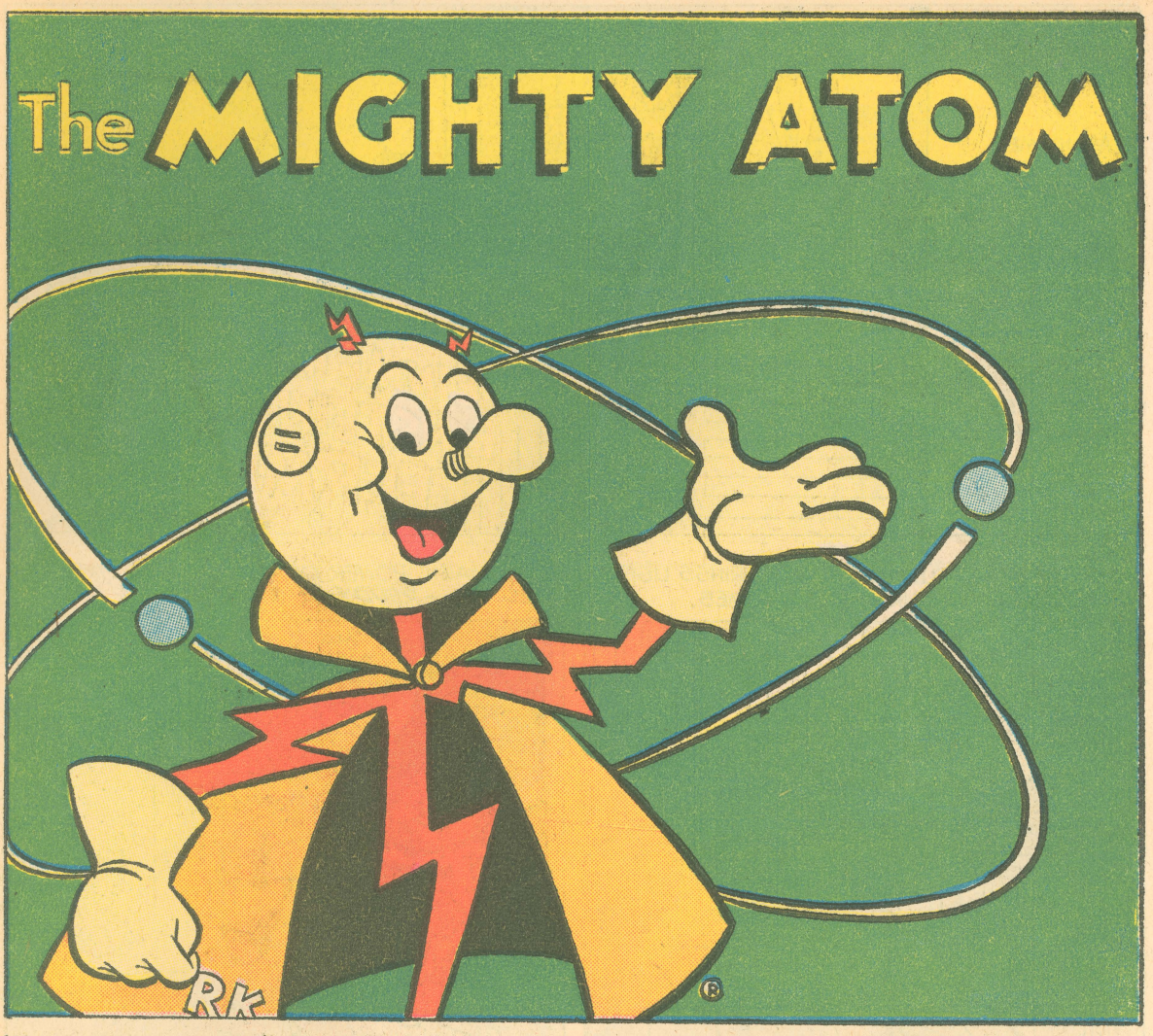
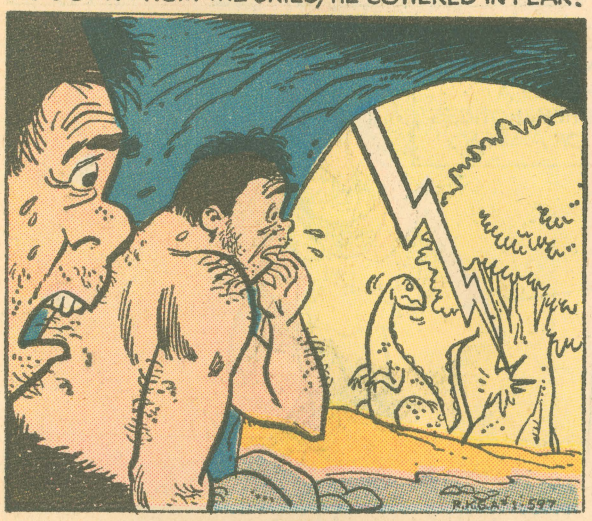
The MIGHTY ATOM



WHEN EARLY MAN FIRST SAW ELECTRICITY THUNDERING DOWN FROM THE SKIES, HE COWERED IN FEAR.



UNCOUNTED CENTURIES HAVE PASSED AND MAN HAS LEARNED TO HARNESS THIS COLOSSAL ENERGY. TODAY, THE MIRACLE OF ELECTRICITY IS A VITAL PART OF OUR DAILY LIVES.

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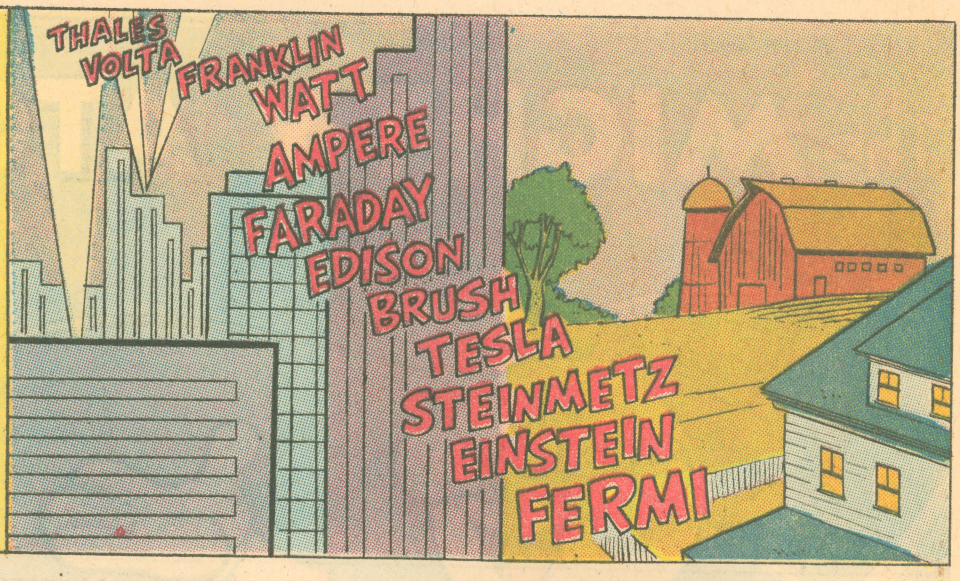
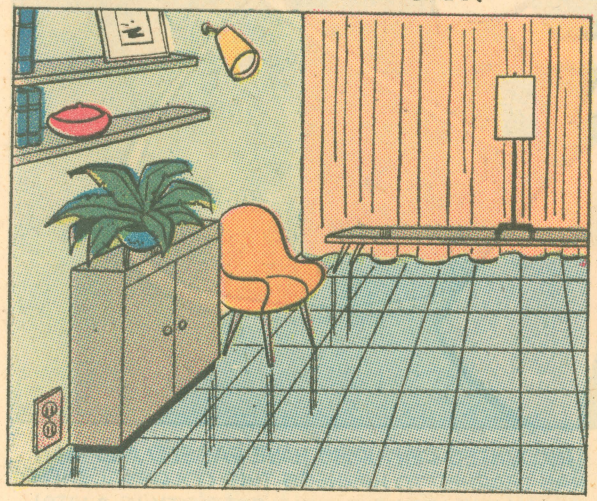
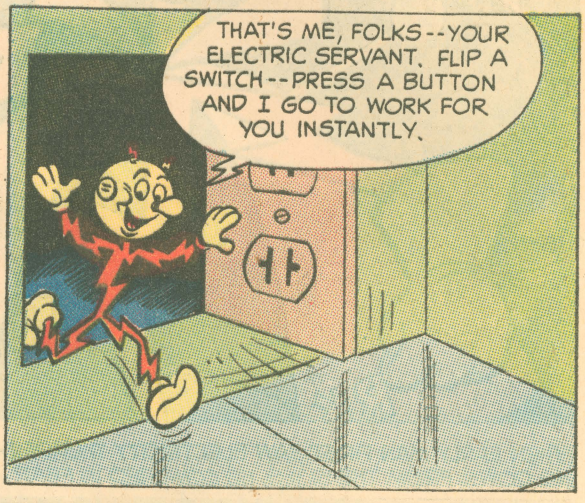
MANY MEN HAVE CONTRIBUTED TO THE PROGRESS OF ELECTRICITY. THEIR GENIUS HELPED DEVELOP THE MIGHTY POWER THAT RUNS OUR CITIES, FACTORIES AND FARMS.

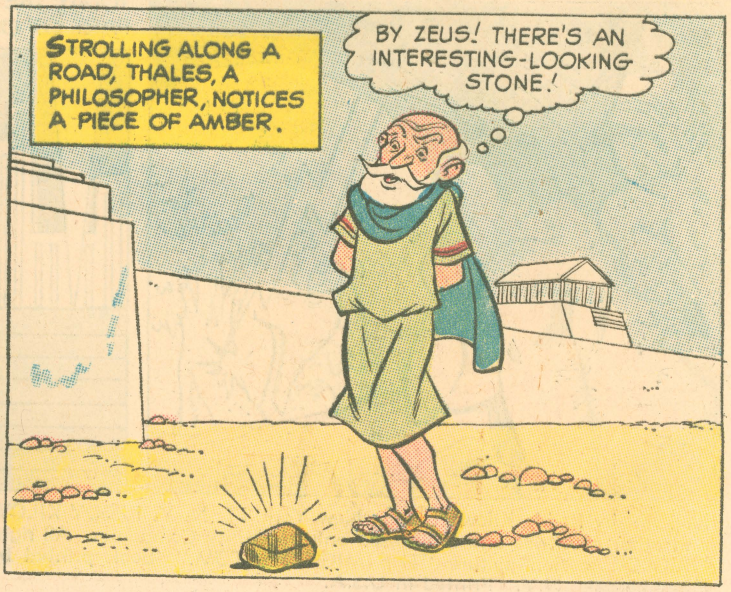


AND THE MAGIC ELECTRIC POWER BRINGS LIGHT AND BEAUTY TO OUR MODERN HOMES.

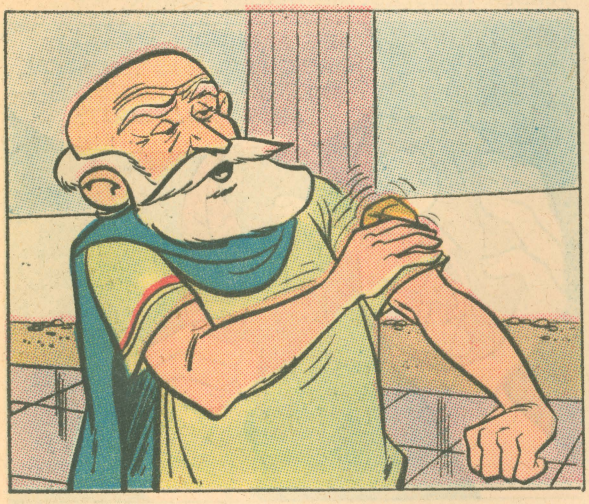


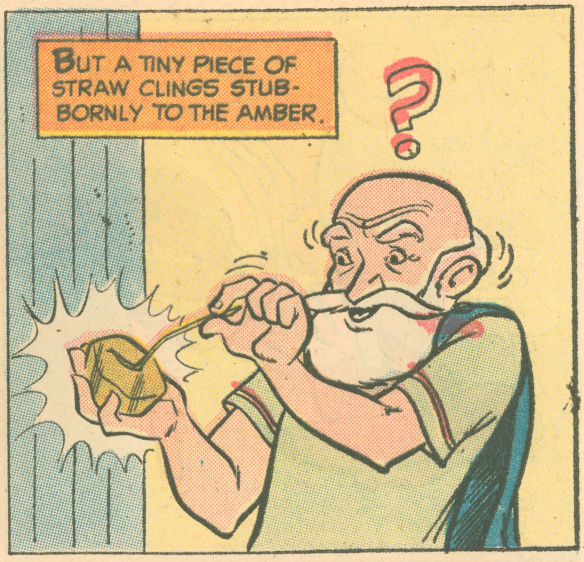
THIS MAGIC POWER OF ELECTRICITY IS SYMBOLIZED BY --REDDY KILOWATT.

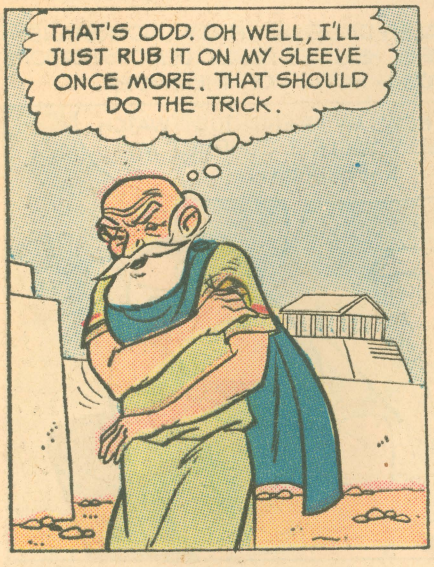




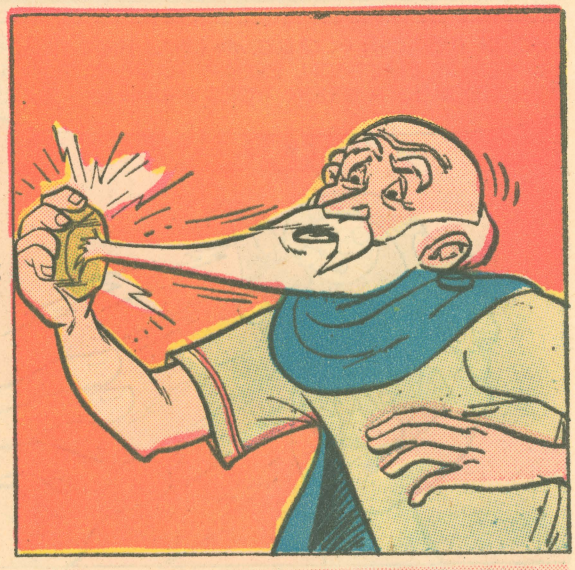
PICKING UP THE AMBER, HE RUBS IT AGAINST HIS SLEEVE TO CLEAN AWAY THE DUST.



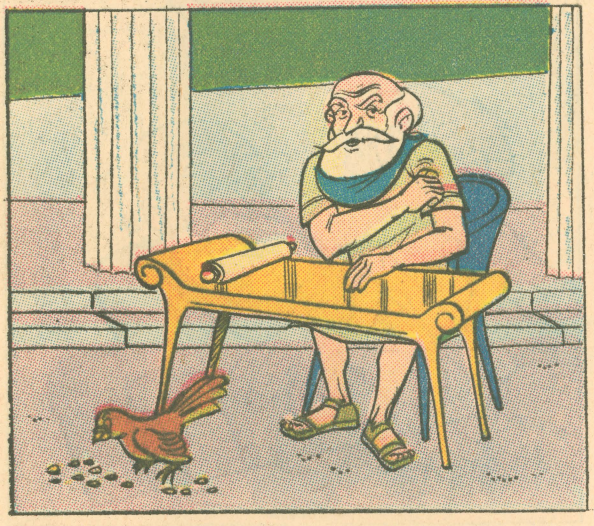


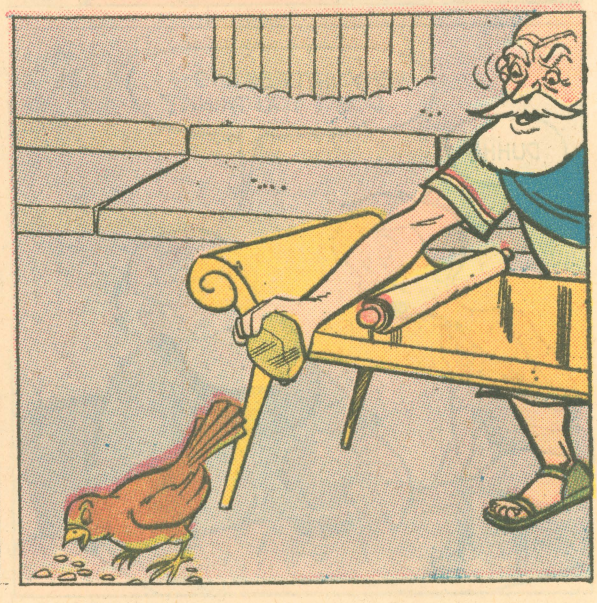


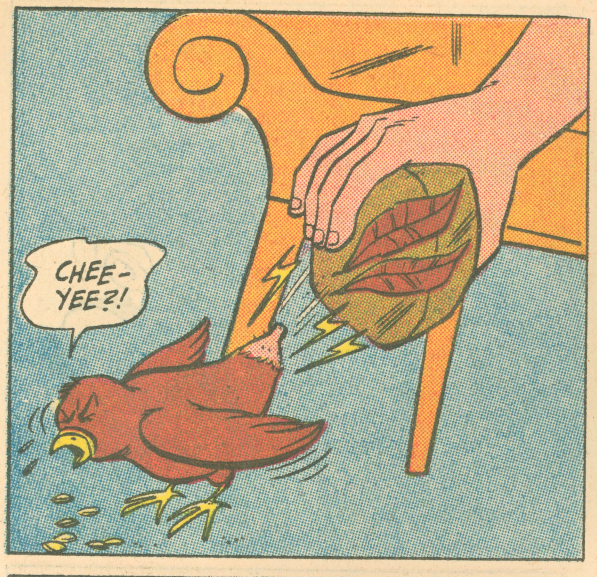
BY RUBBING THE AMBER THALES PRODUCES A CHARGE OF ***STATIC ELECTRICITY.*** THEN, WHEN THE AMBER PASSES TOO CLOSE TO HIS BEARD...



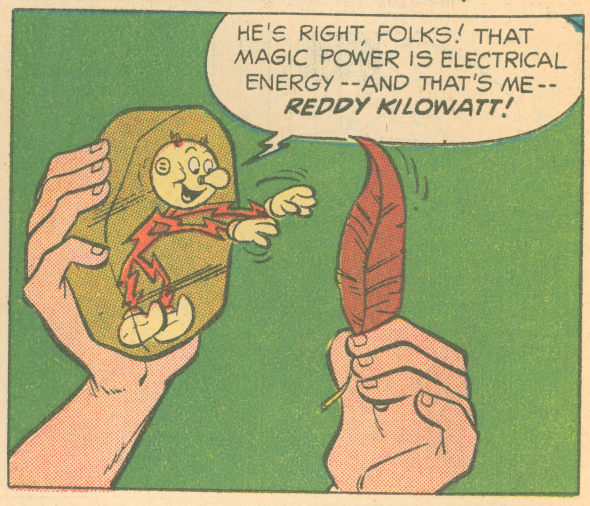
PUZZLED BY THE STRANGE POWERS OF THE AMBER, THALES MAKES FURTHER EXPERIMENTS.

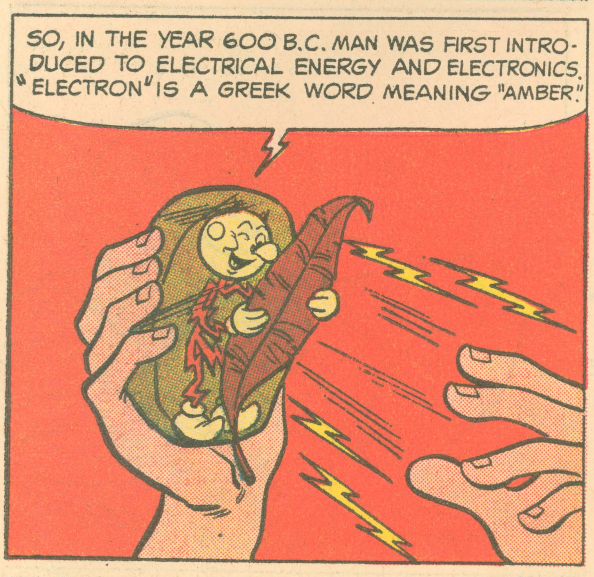




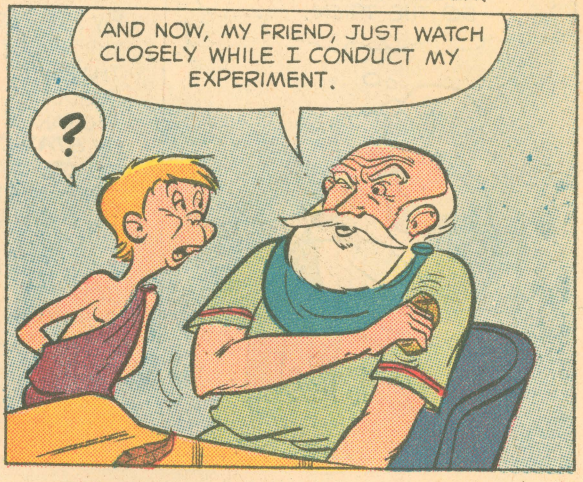


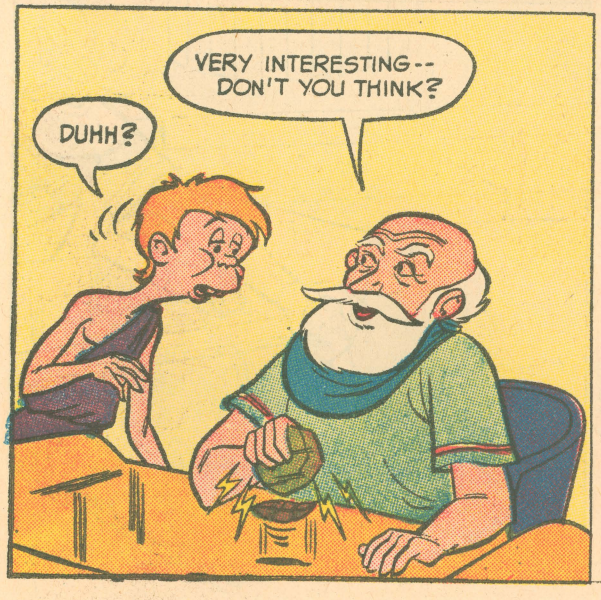
THALES IS CONVINCED THAT THE PIECE OF AMBER HOLDS SOME MAGIC POWER.

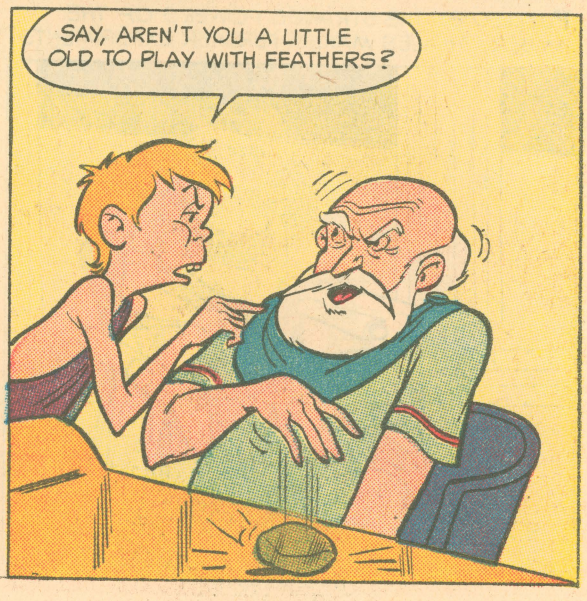



SO, IN THE YEAR 600 B.C. MAN WAS FIRST INTRODUCED TO ELECTRICAL ENERGY AND ELECTRONICS. "ELECTRON" IS A GREEK WORD MEANING "AMBER."

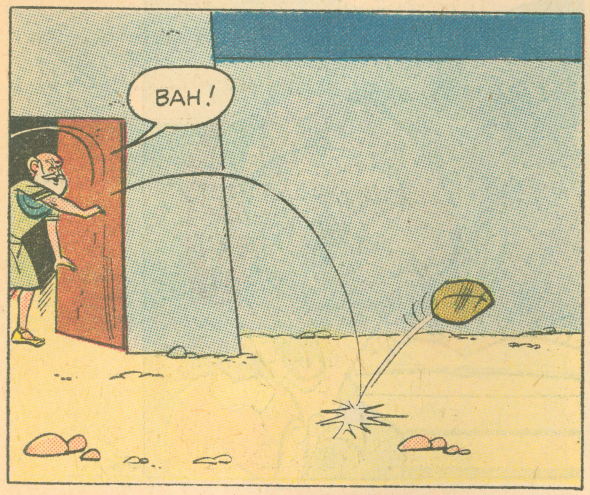
THOUGH THALES DOES NOT FULLY UNDERSTAND HIS DISCOVERY, HE GIVES PUBLIC DEMONSTRATIONS OF THE AMAZING POWER OF THE AMBER.



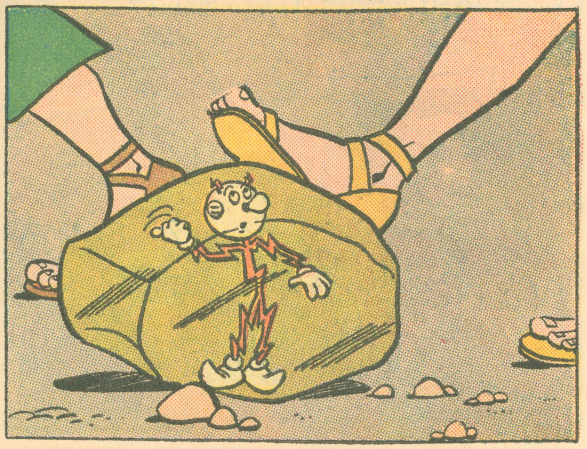




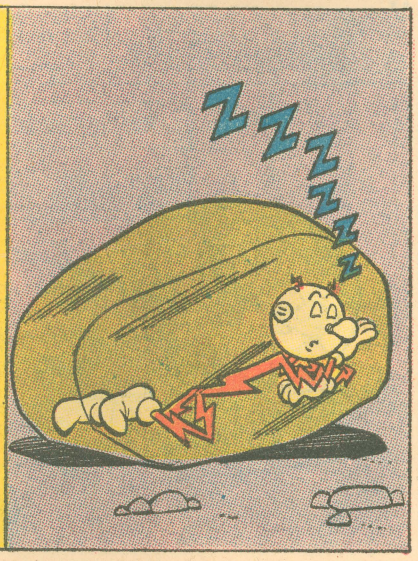
DISCOURAGED BY THE LACK OF PUBLIC INTEREST THALES TOSSES THE AMBER AWAY...



SINCE THE BEGINNING OF TIME REDDY HAD BEEN WAITING FOR SOMEONE TO DISCOVER HIS MAGIC AND PUT IT TO WORK. NOW IT LOOKS LIKE NO ONE IS INTERESTED.

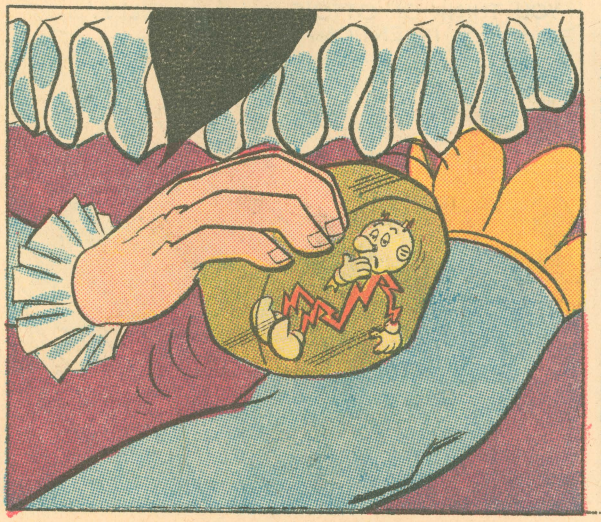


FOR 2000 YEARS REDDY'S SECRET OF POWER LIES SLUMBERING, LOCKED IN THE AMBER.

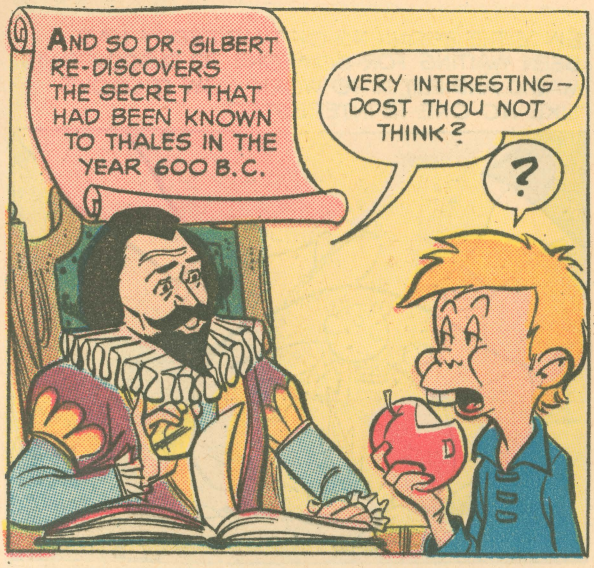


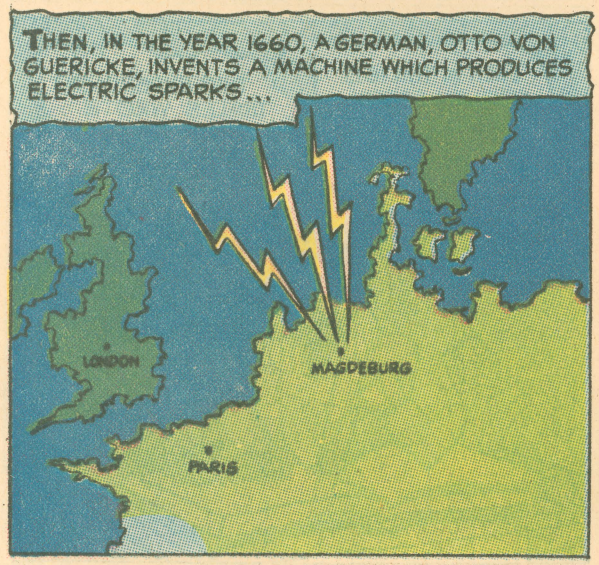
THEN IN THE 16TH CENTURY REDDY IS REDISCOVERED BY DR. WILLIAM GILBERT...
THIS EXPERIMENT THALES WROTE ABOUT WAS MOST UNUSUAL. I WONDER IF IT COULD BE TRUE?

REPEATING THALES' EXPERIMENT HE RUBS A PIECE OF AMBER ON HIS SLEEVE.

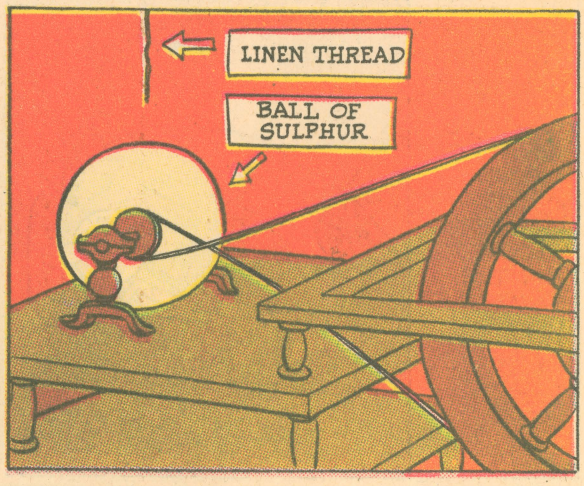


THEN GILBERT HOLDS THE AMBER TOWARD THE PAGES OF A BOOK AND RELEASES ITS MAGIC POWERS.

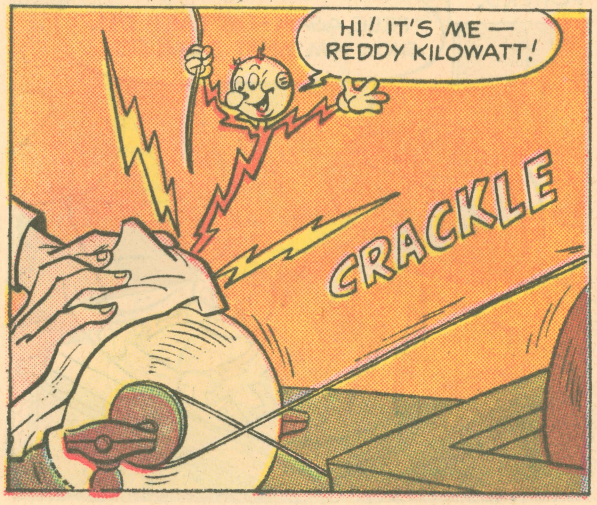

AND SO DR. GILBERT RE-DISCOVERS THE SECRET THAT HAD BEEN KNOWN TO THALES IN THE YEAR 600 B.C.
VERY INTERESTING— DOST THOU NOT THINK?
?

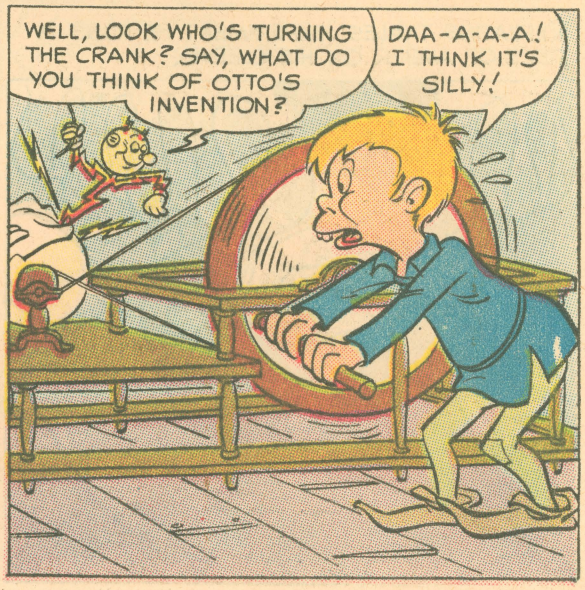

THEN, IN THE YEAR 1660, A GERMAN, OTTO VON GUERICKE, INVENTS A MACHINE WHICH PRODUCES ELECTRIC SPARKS...
LONDON
MAGDEBURG
PARIS

VON GUERICKE'S DEVICE CONSISTS OF A BALL OF SULPHUR MOUNTED ON AN AXIS. A THREAD IS SUSPENDED OVER THE BALL...



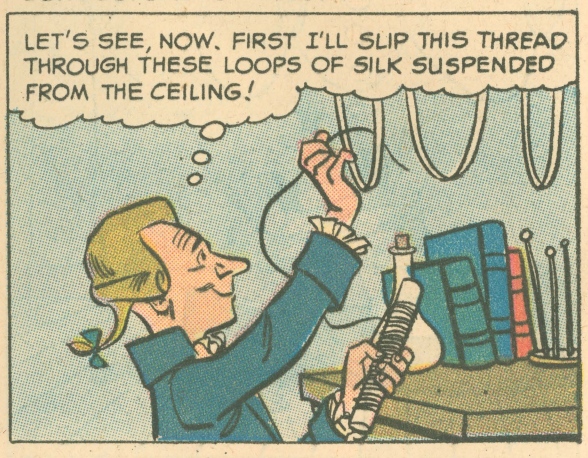
WHEN A CLOTH IS HELD AGAINST THE SPINNING SULPHUR BALL, ELECTRIC SPARKS LEAP INTO THE OVERHANGING THREAD.





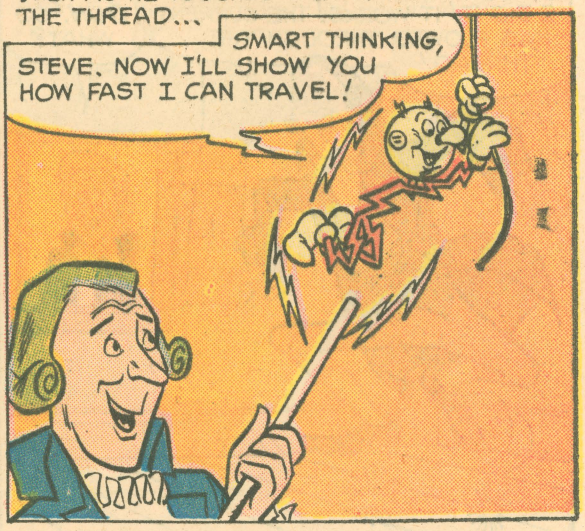
UNFORTUNATELY PEOPLE CONSIDER VON GUERICKE'S DEVICE TO BE USELESS...

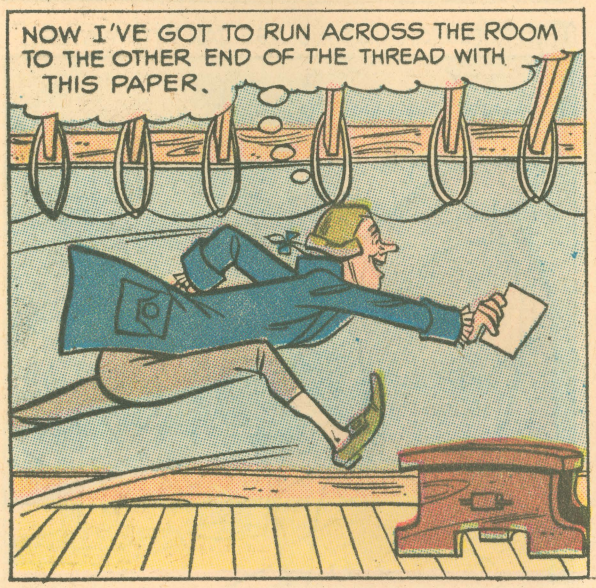
BUT REDDY WAS NOT TO BE FORGOTTEN AGAIN. IN 1729 STEPHEN GRAY OF ENGLAND PROVES THAT CERTAIN MATERIALS ARE ***GOOD CONDUCTORS*** OF ELECTRICITY...

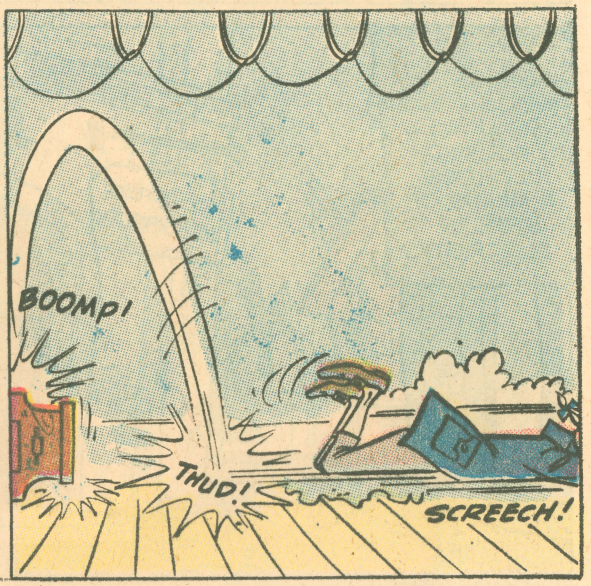


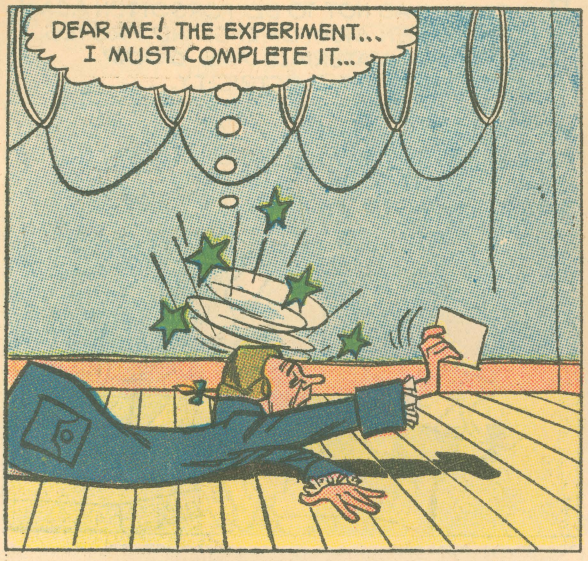
THEN, BY MEANS OF FRICTION GRAY ELECTRIFIES A GLASS ROD.

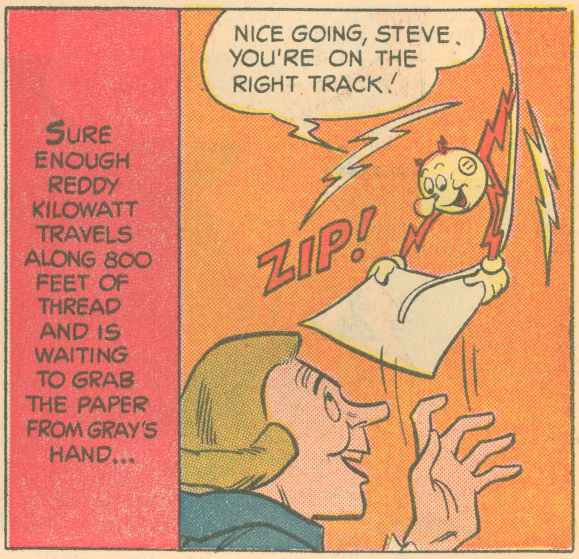
THEN AS HE TOUCHES THE CHARGED ROD TO THE THREAD...

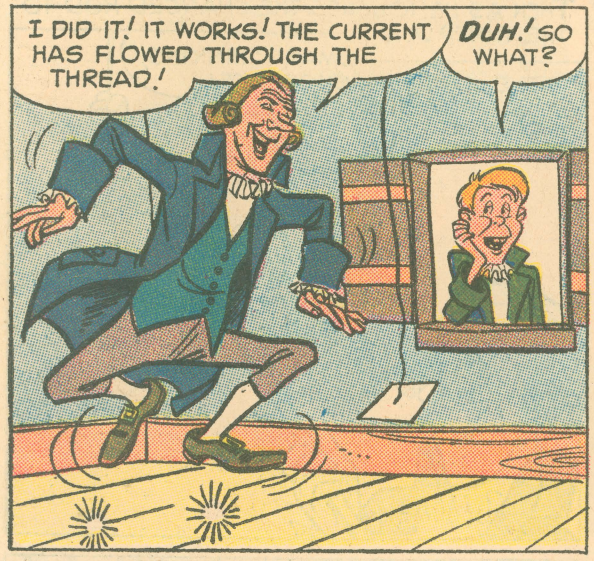


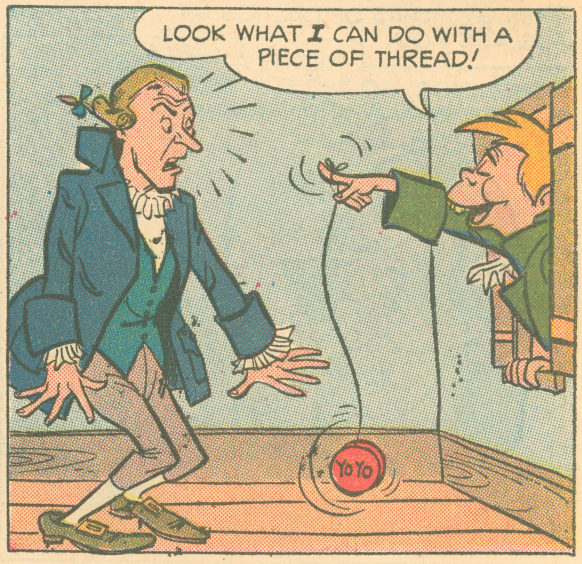


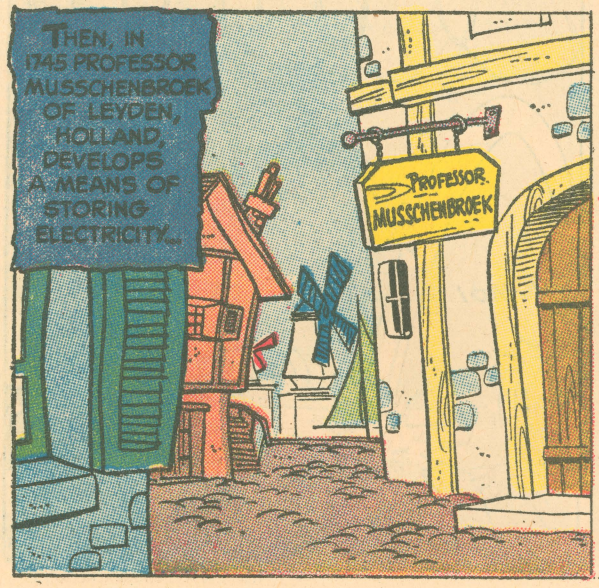


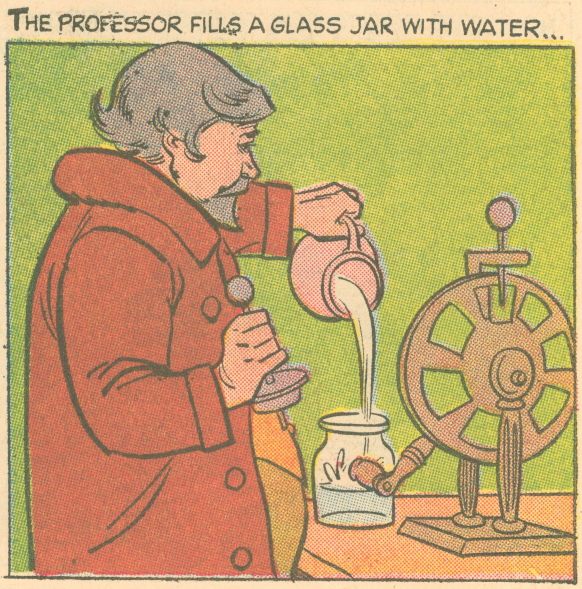

DEAR ME! THE EXPERIMENT... I MUST COMPLETE IT...

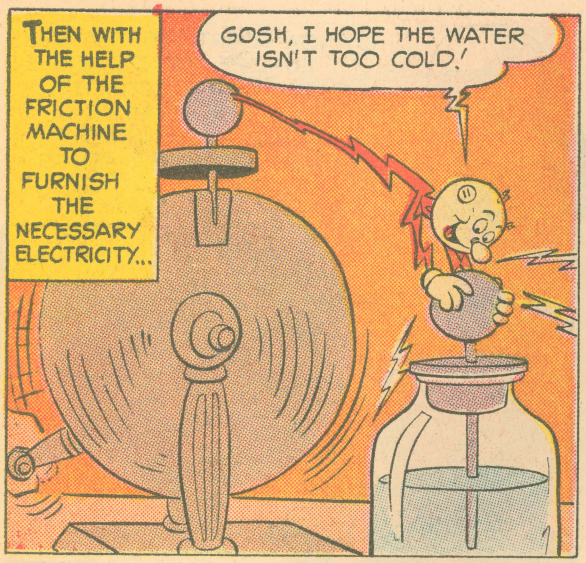

SURE ENOUGH REDDY KILOWATT TRAVELS ALONG 800 FEET OF THREAD AND IS WAITING TO GRAB THE PAPER FROM GRAY'S HAND...
NICE GOING, STEVE. YOU'RE ON THE RIGHT TRACK!
ZIP!

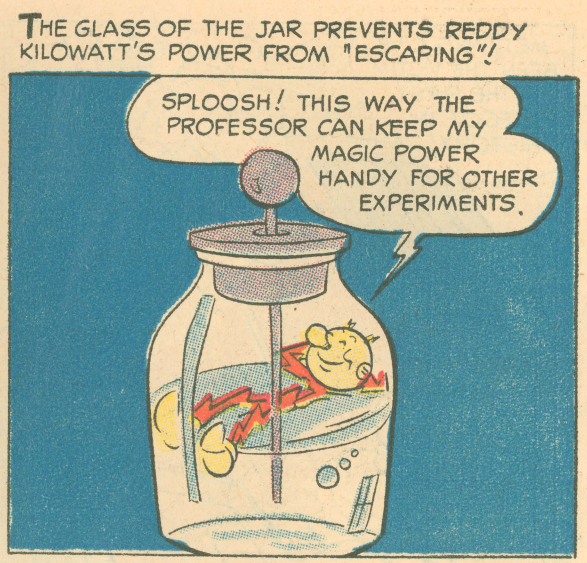

I DID IT! IT WORKS! THE CURRENT HAS FLOWED THROUGH THE THREAD!
DUH! SO WHAT?

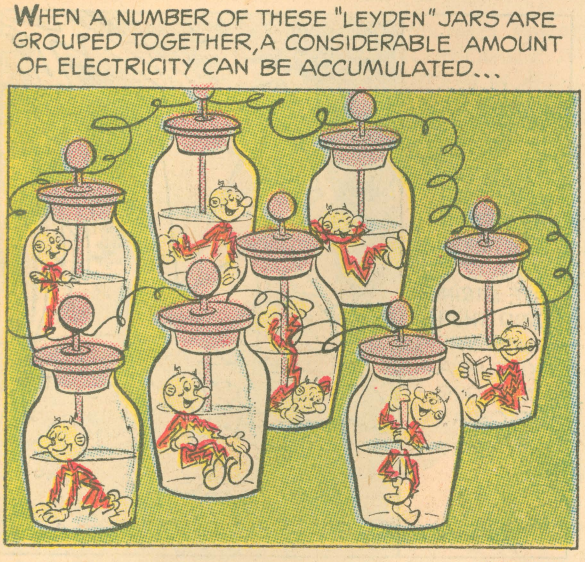

LOOK WHAT I CAN DO WITH A PIECE OF THREAD!
YO-YO

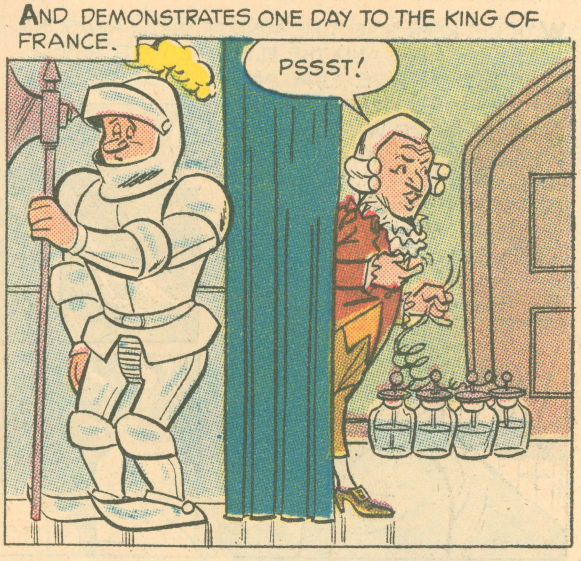

THEN, IN 1745 PROFESSOR MUSSCHENBROEK OF LEYDEN, HOLLAND, DEVELOPS A MEANS OF STORING ELECTRICITY...
PROFESSOR MUSSCHENBROEK

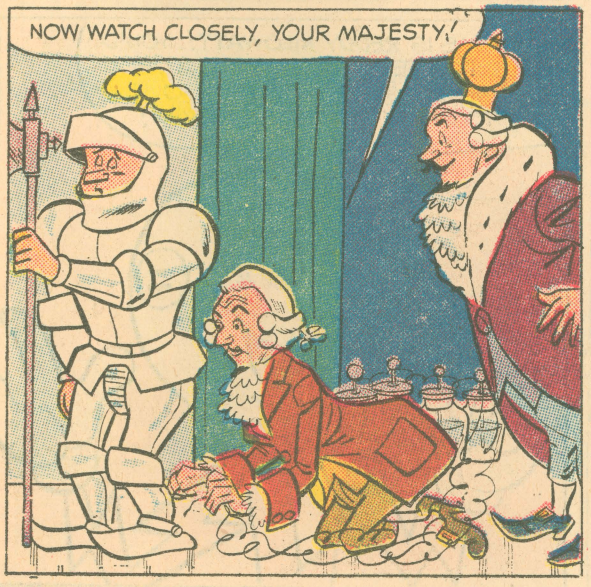

THE PROFESSOR FILLS A GLASS JAR WITH WATER...

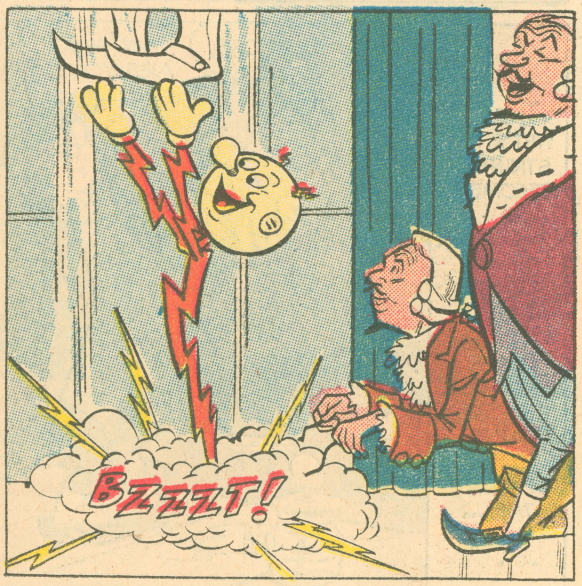

THEN WITH THE HELP OF THE FRICTION MACHINE TO FURNISH THE NECESSARY ELECTRICITY...
GOSH, I HOPE THE WATER ISN'T TOO COLD!

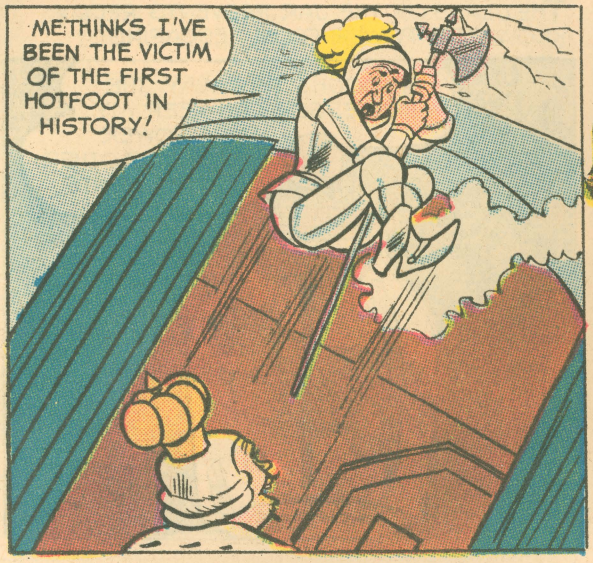

THE GLASS OF THE JAR PREVENTS REDDY KILOWATT'S POWER FROM "ESCAPING"!
SPLOOSH! THIS WAY THE PROFESSOR CAN KEEP MY MAGIC POWER HANDY FOR OTHER EXPERIMENTS.


WHEN A NUMBER OF THESE "LEYDEN" JARS ARE GROUPED TOGETHER, A CONSIDERABLE AMOUNT OF ELECTRICITY CAN BE ACCUMULATED...

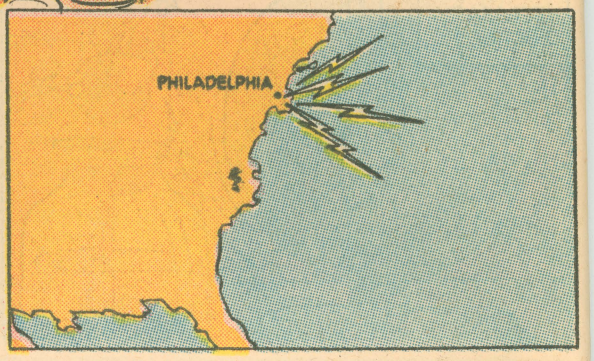

AND DEMONSTRATES ONE DAY TO THE KING OF FRANCE.
PSSST!


NOW WATCH CLOSELY, YOUR MAJESTY!

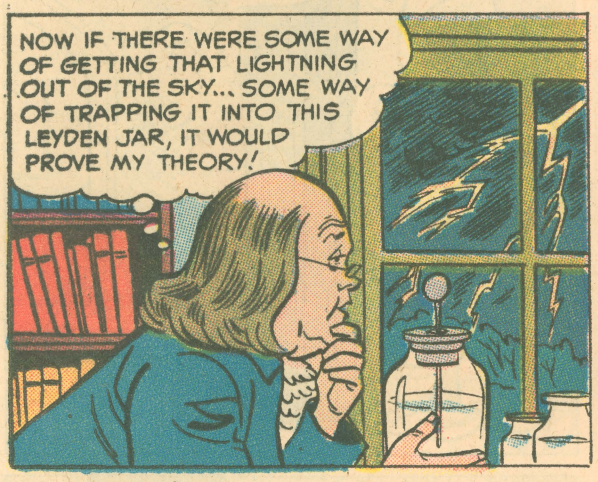

BZZZT!



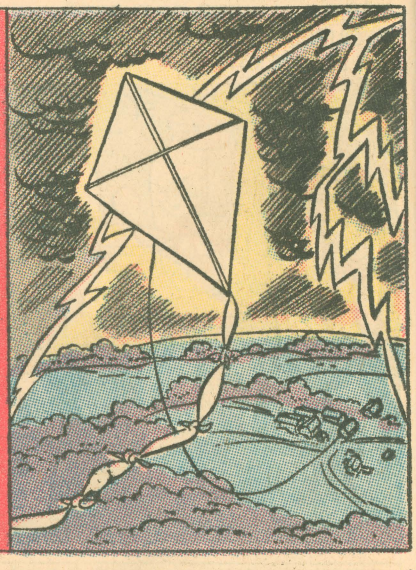
BY NOW SCIENTISTS THROUGHOUT EUROPE WERE EXPERIMENTING WITH ELECTRICITY. ACROSS THE ATLANTIC BENJAMIN FRANKLIN IS CONDUCTING EXPERIMENTS OF HIS OWN...



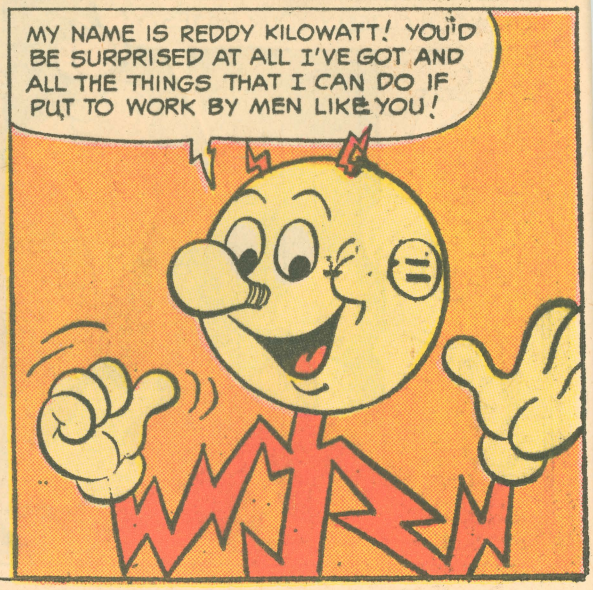
WITH HIS KEEN SCIENTIFIC MIND FRANKLIN REASONS THAT LIGHTNING AND THE ELECTRICITY FORMED BY FRICTION ARE ONE AND THE SAME...

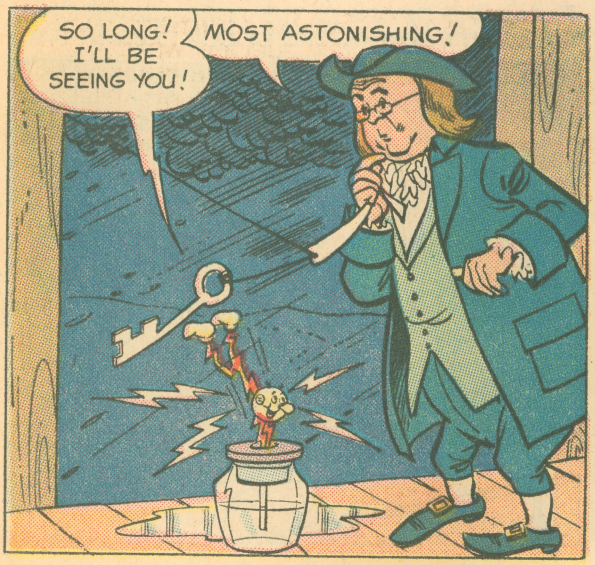

NOW IF THERE WERE SOME WAY OF GETTING THAT LIGHTNING OUT OF THE SKY... SOME WAY OF TRAPPING IT INTO THIS LEYDEN JAR, IT WOULD PROVE MY THEORY!

IN 1752, TO TEST HIS THEORY, BEN TIES A METAL KEY TO ONE END OF A KITE STRING AND THEN FLIES THE KITE IN A THUNDER STORM.



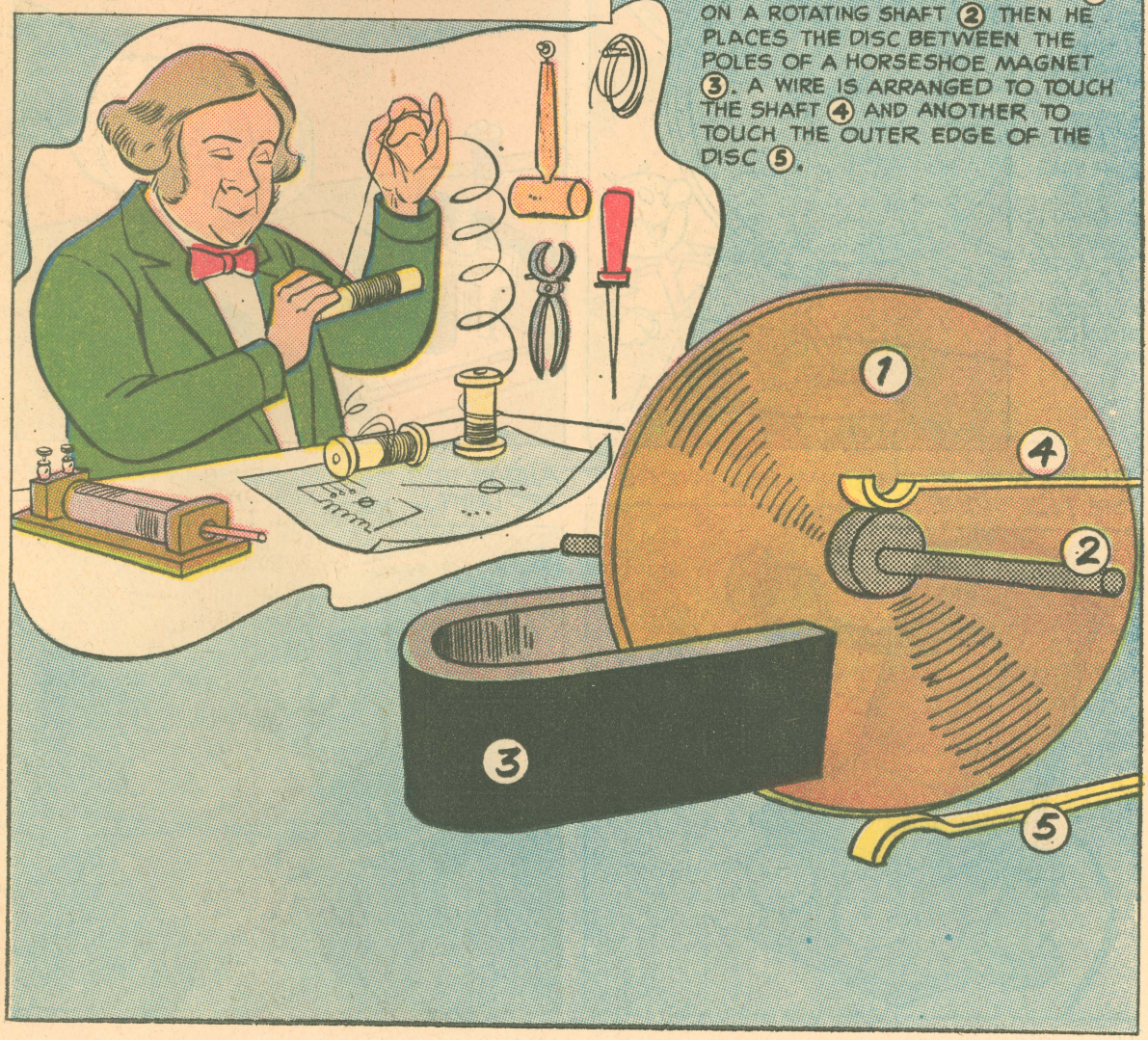
THE WET KITE STRING BECOMES A CONDUCTOR THAT DRAWS REDDY KILOWATT DOWN FROM THE SKY TO CHARGE THE LEYDEN JAR...



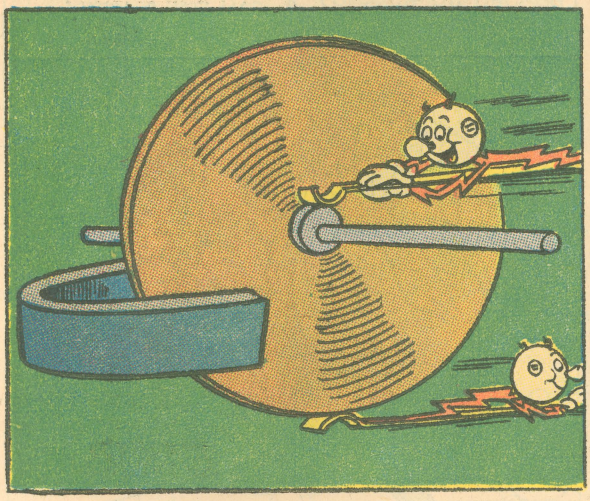


FRANKLIN'S EXPERIMENTS HELP MICHAEL FARADAY, AN ENGLISHMAN, DISCOVER HOW TO PRODUCE A CONTINUOUS ELECTRICAL CURRENT. THIS IS IN 1831...

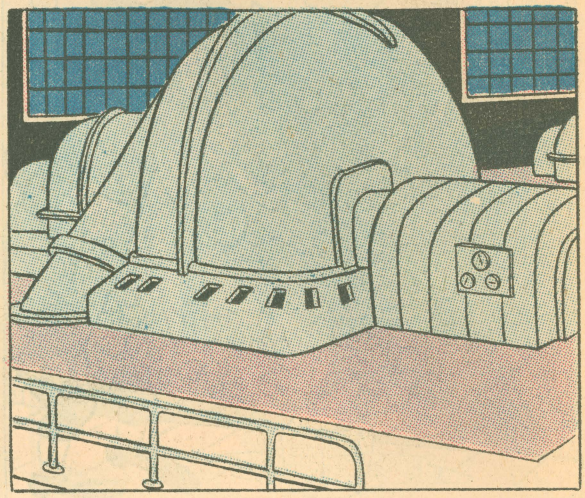
FARADAY MOUNTS A COPPER DISC (1) ON A ROTATING SHAFT (2) THEN HE PLACES THE DISC BETWEEN THE POLES OF A HORSESHOE MAGNET (3). A WIRE IS ARRANGED TO TOUCH THE SHAFT (4) AND ANOTHER TO TOUCH THE OUTER EDGE OF THE DISC (5).



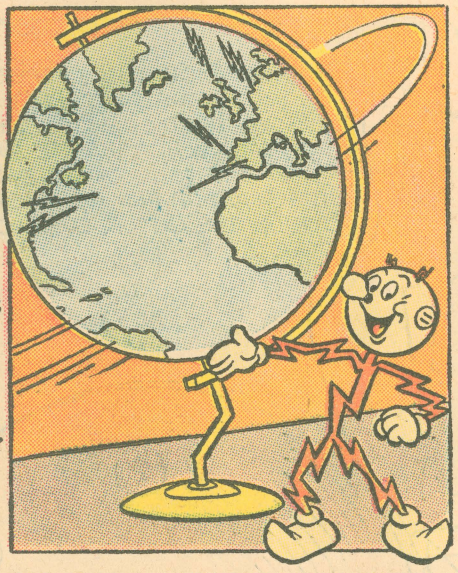
WHEN THE DISC IS ROTATED, A CONSTANT CURRENT IS GENERATED...



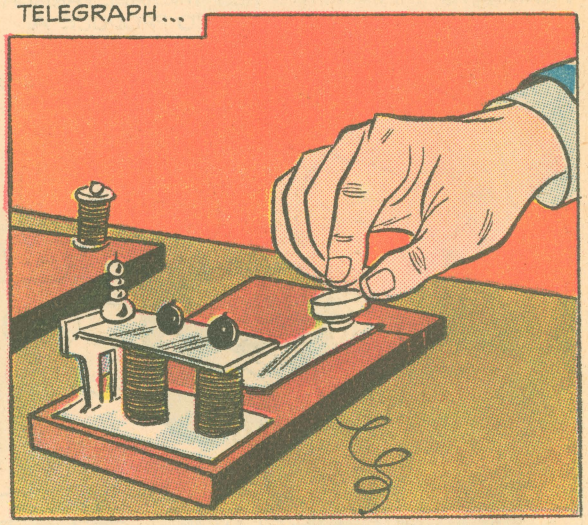
FARADAY'S DEVICE IS THE FORERUNNER OF THE MIGHTY GENERATORS OF OUR PRESENT DAY...



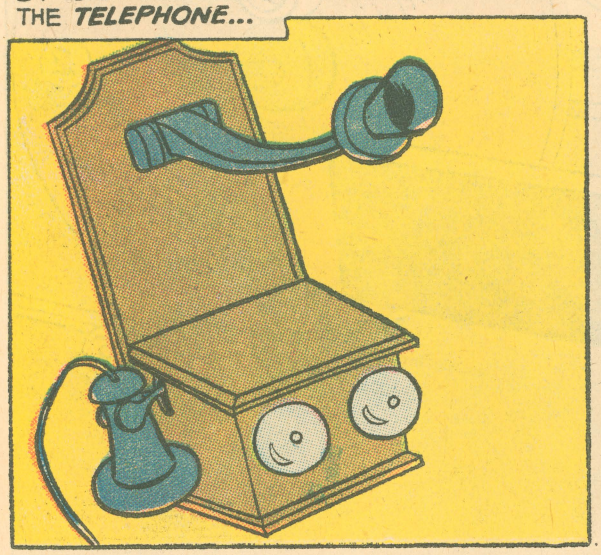
BY THIS TIME SCIENTISTS THE WORLD OVER ARE APPLYING REDDY KILOWATT'S AMAZING POWERS TO PRACTICAL INVENTIONS.



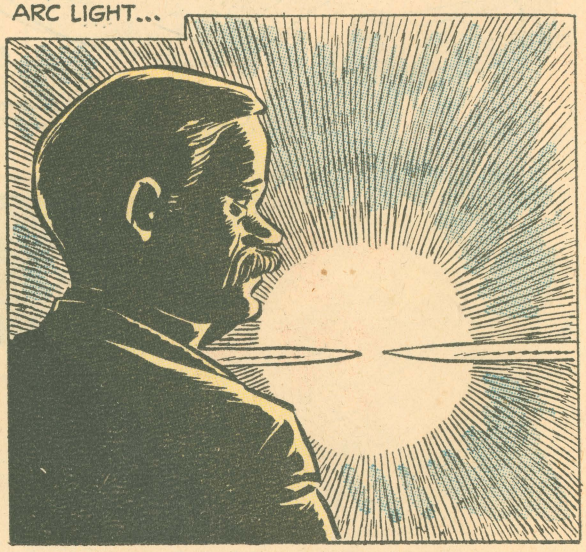
IN 1837 SAMUEL MORSE INVENTS THE ELECTRIC TELEGRAPH...



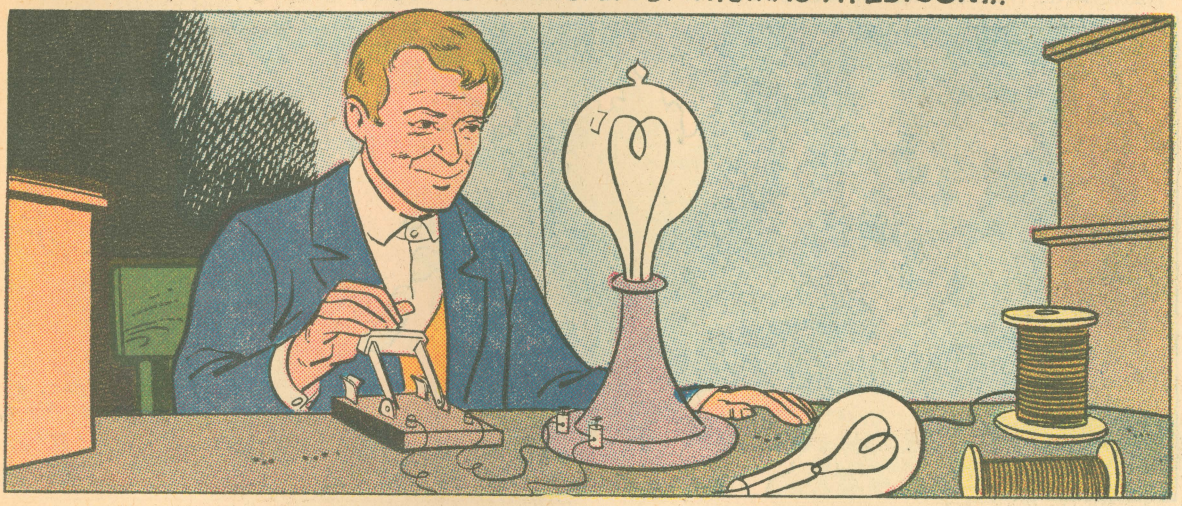
BY 1876 ALEXANDER GRAHAM BELL INVENTS THE ***TELEPHONE***...



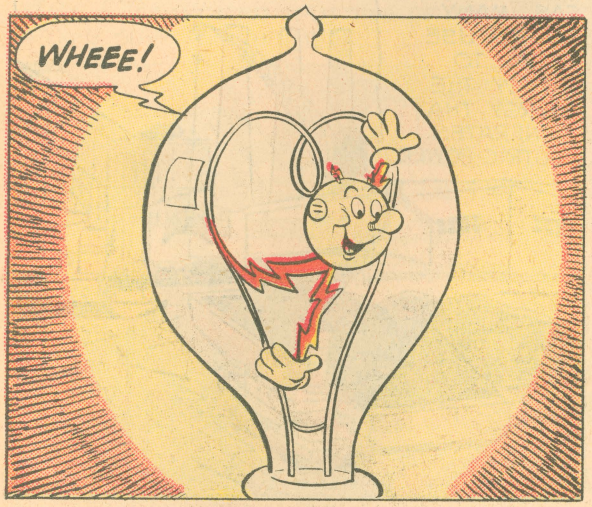
AND IN 1879 CHARLES BRUSH DEVELOPS THE ARC LIGHT...



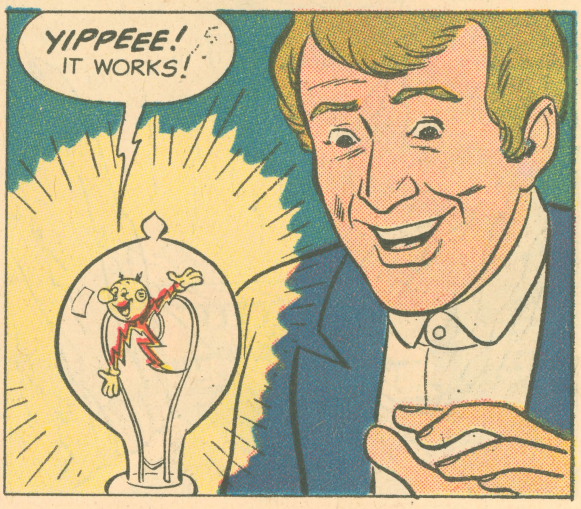
PERHAPS THE GREATEST SINGLE STEP IN ELECTRICAL PROGRESS IS MADE IN 1879 WHEN THE FIRST SUCCESSFUL ***LIGHT BULB*** IS DEVELOPED BY ***THOMAS A. EDISON...***

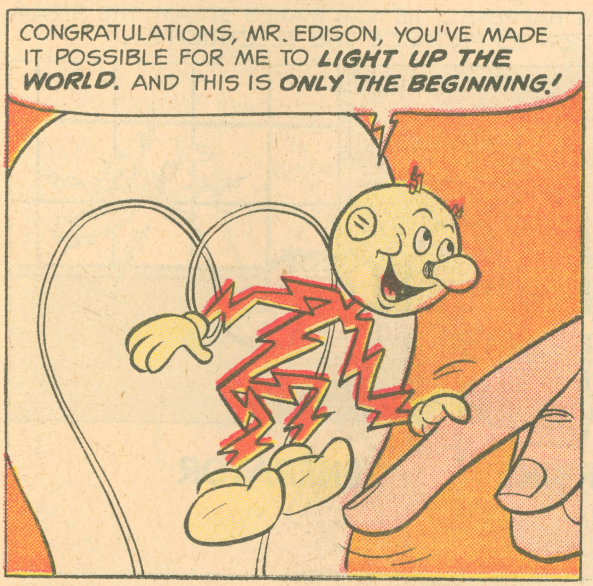


AS EDISON THROWS THE SWITCH REDDY FLASHES INTO ACTION...

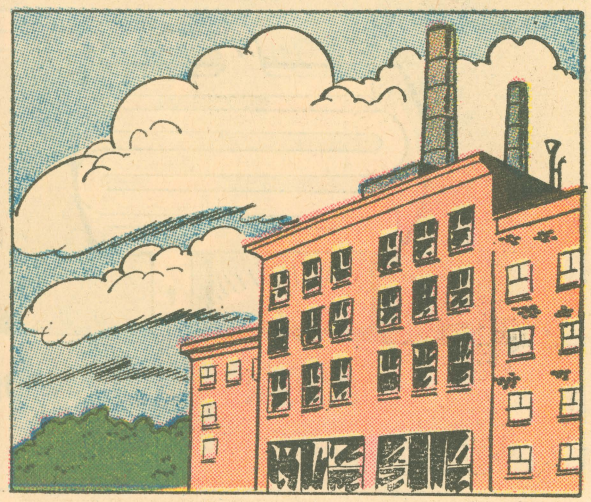


HE CHARGES THROUGH THE WIRES UNTIL THEY ARE WHITE-HOT AND THE BULB LIGHTS UP...

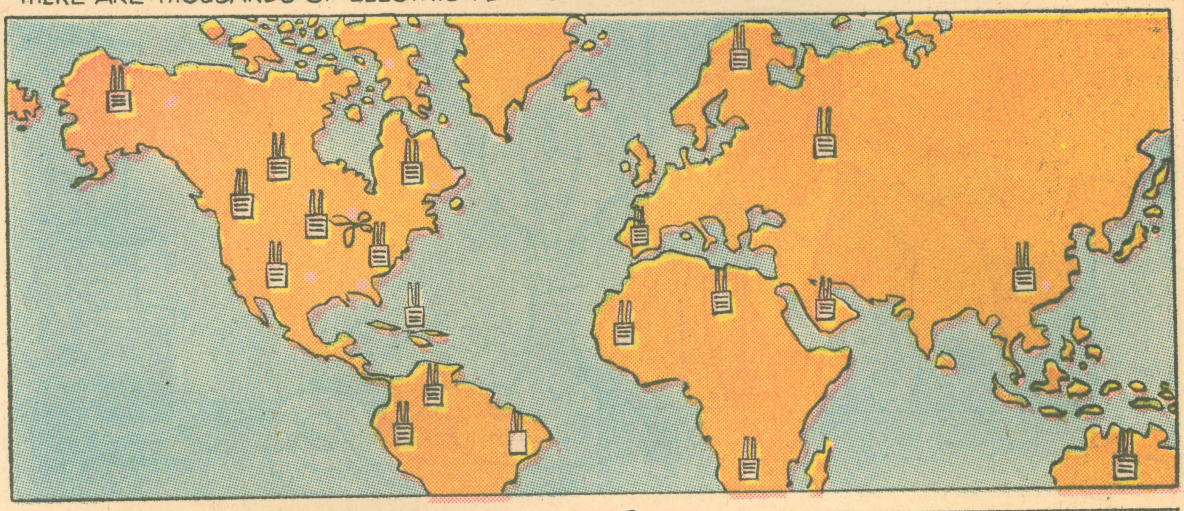




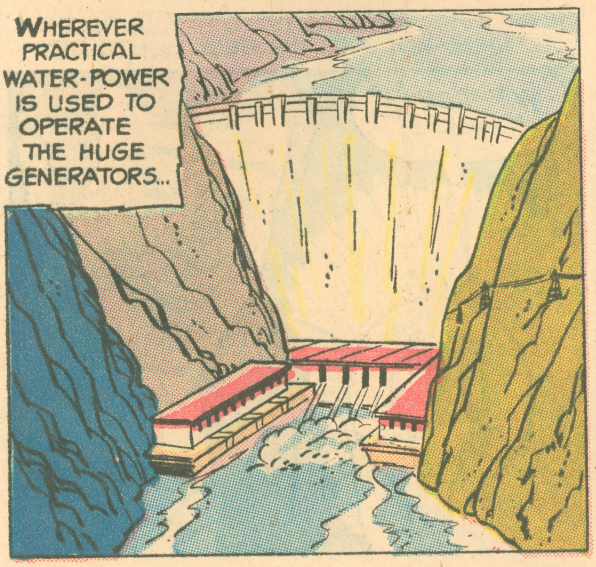
EDISON BUILDS THE FIRST SMALL POWER STATION IN NEW YORK CITY IN 1882, AND SO BEGINS THE ELECTRIC LIGHT AND POWER INDUSTRY...



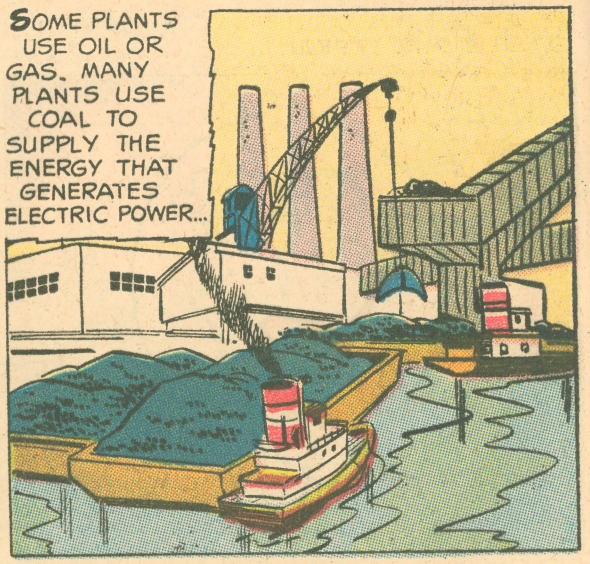
ELECTRIC PLANTS SPRING UP THROUGHOUT THE UNITED STATES AND OTHER COUNTRIES. TODAY THERE ARE THOUSANDS OF ELECTRIC PLANTS ALL OVER THE WORLD...



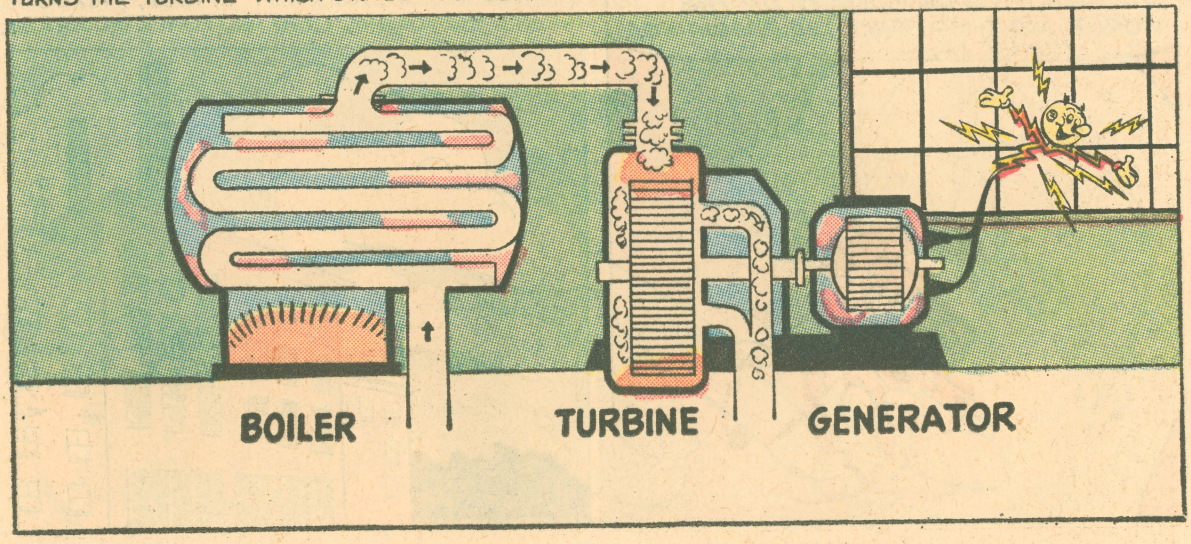
WHEREVER PRACTICAL WATER-POWER IS USED TO OPERATE THE HUGE GENERATORS...

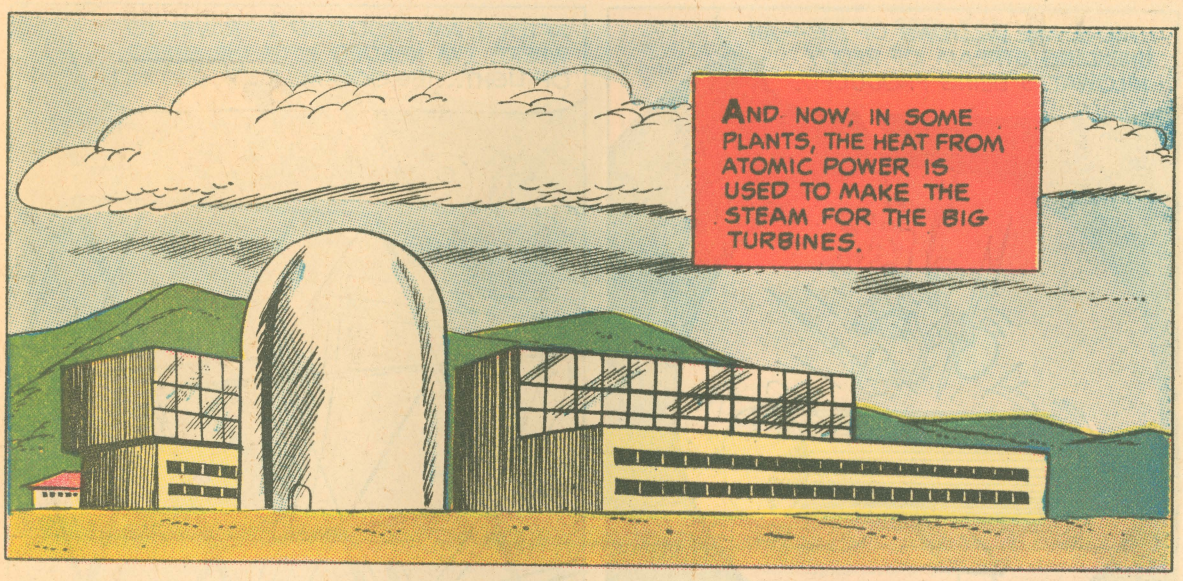


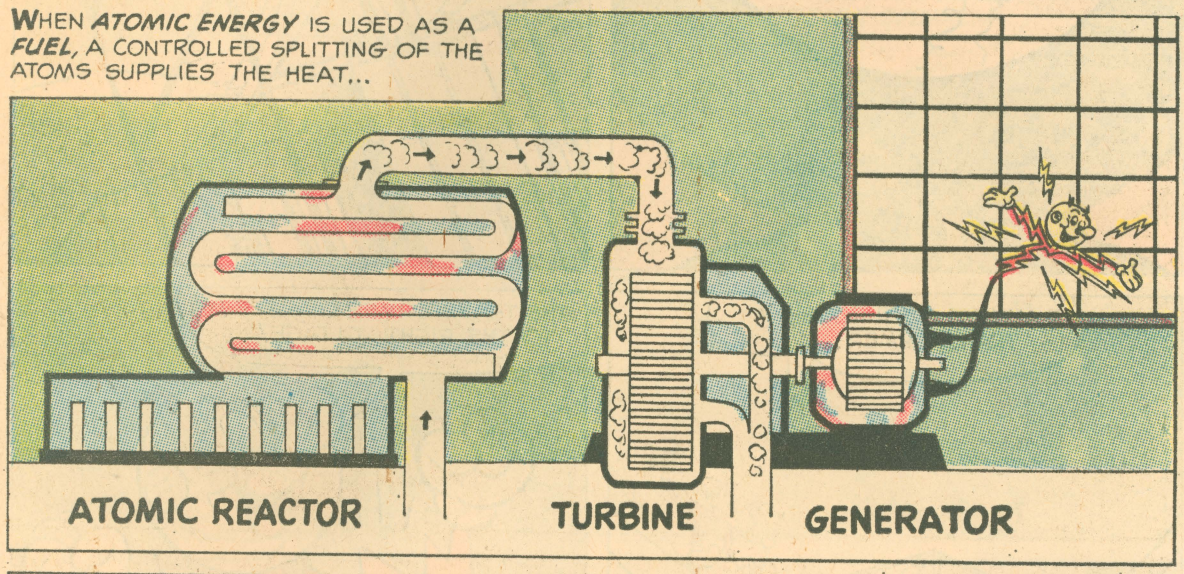
SOME PLANTS USE OIL OR GAS. MANY PLANTS USE COAL TO SUPPLY THE ENERGY THAT GENERATES ELECTRIC POWER...

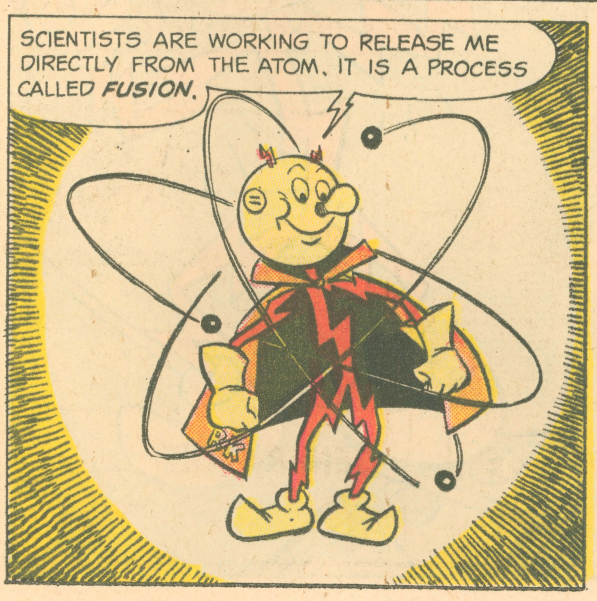


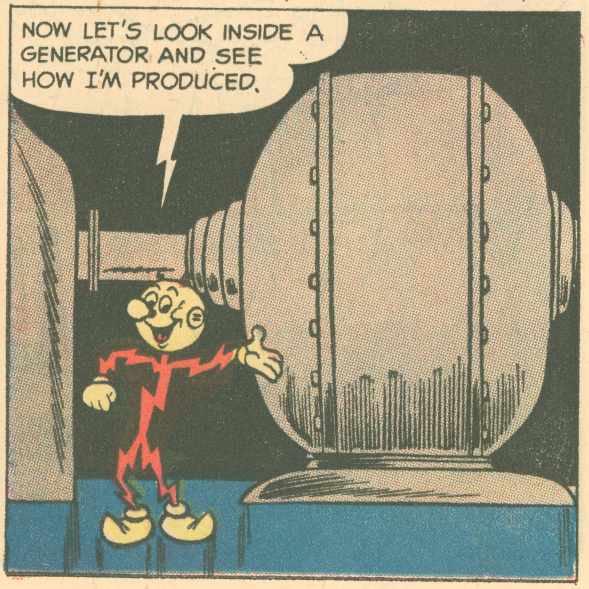
BUT NO MATTER WHAT FUEL IS USED, HERE'S WHAT HAPPENS...THE HEAT MAKES STEAM, THE STEAM TURNS THE TURBINE WHICH DRIVES THE GENERATOR--TO PRODUCE THE ELECTRICITY...

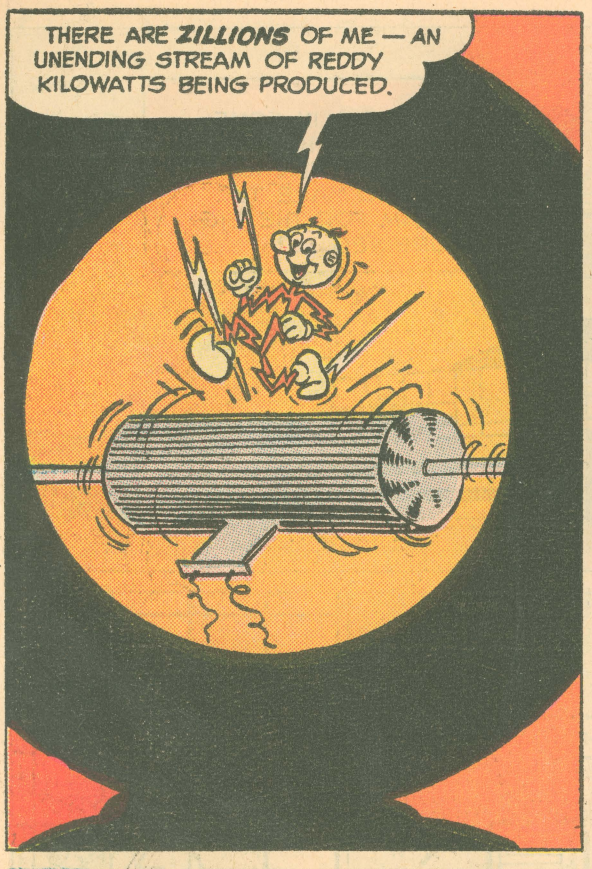


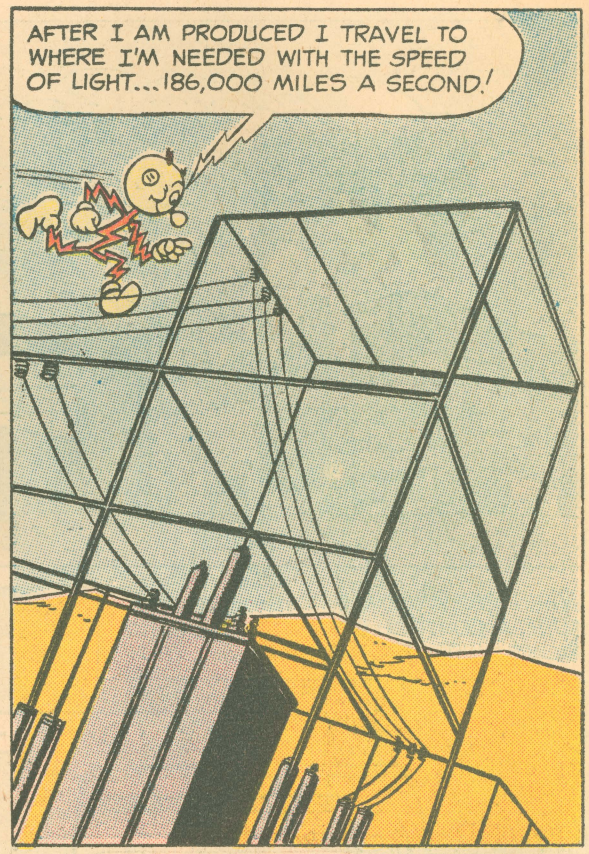

AND NOW, IN SOME PLANTS, THE HEAT FROM ATOMIC POWER IS USED TO MAKE THE STEAM FOR THE BIG TURBINES.

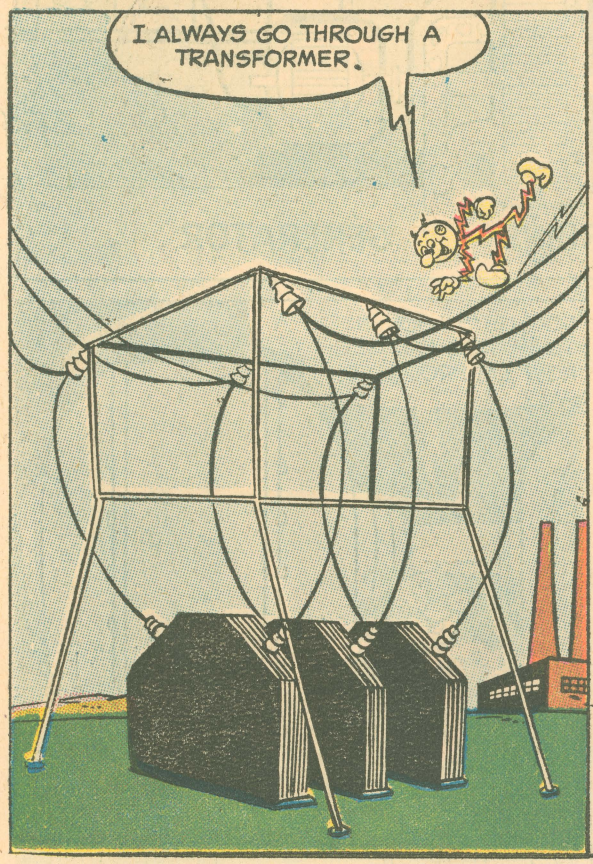

WHEN ATOMIC ENERGY IS USED AS A FUEL, A CONTROLLED SPLITTING OF THE ATOMS SUPPLIES THE HEAT...
ATOMIC REACTOR
TURBINE
GENERATOR

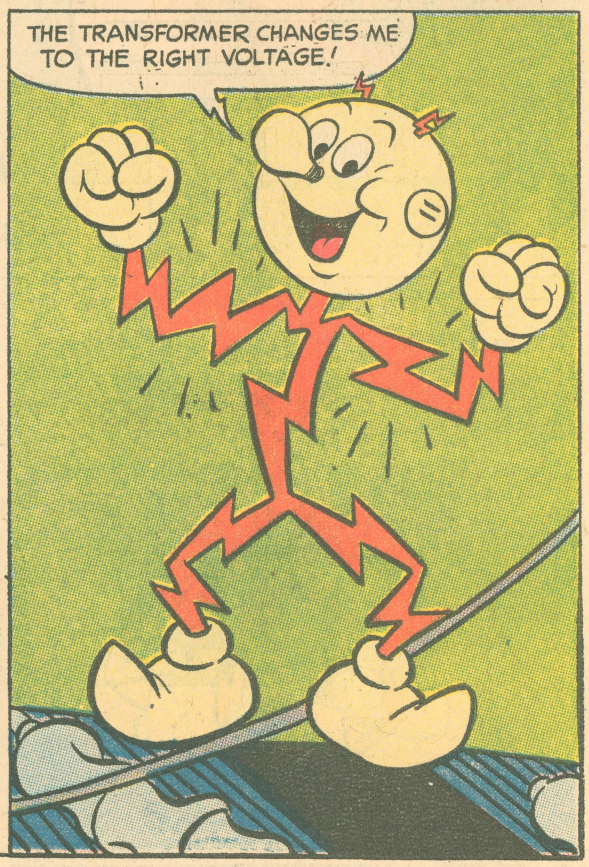

SCIENTISTS ARE WORKING TO RELEASE ME DIRECTLY FROM THE ATOM. IT IS A PROCESS CALLED FUSION.

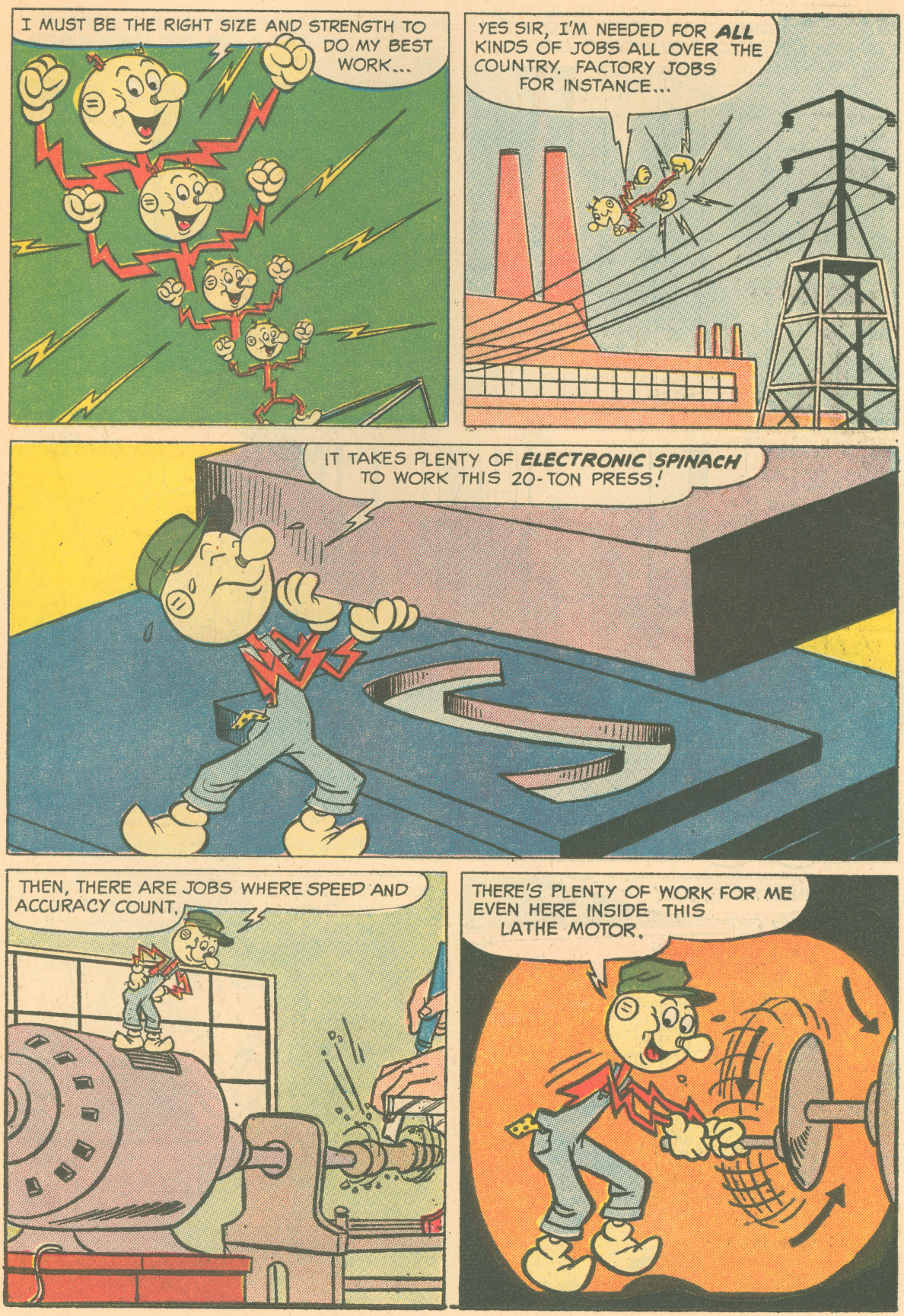

NOW LET'S LOOK INSIDE A GENERATOR AND SEE HOW I'M PRODUCED.


THERE ARE ZILLIONS OF ME — AN UNENDING STREAM OF REDDY KILOWATTS BEING PRODUCED.

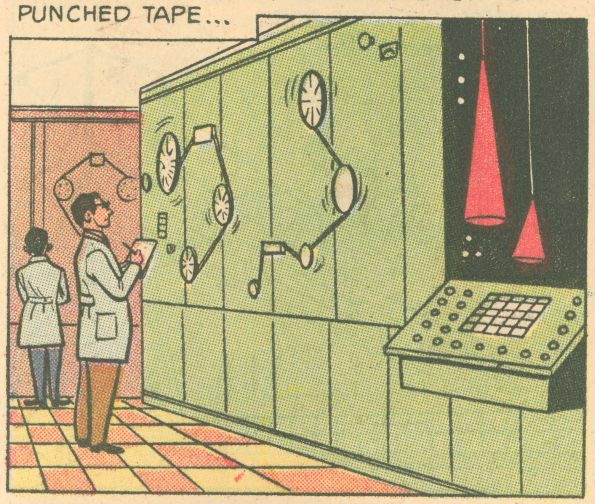

AFTER I AM PRODUCED I TRAVEL TO WHERE I'M NEEDED WITH THE SPEED OF LIGHT... 186,000 MILES A SECOND!


I ALWAYS GO THROUGH A TRANSFORMER.

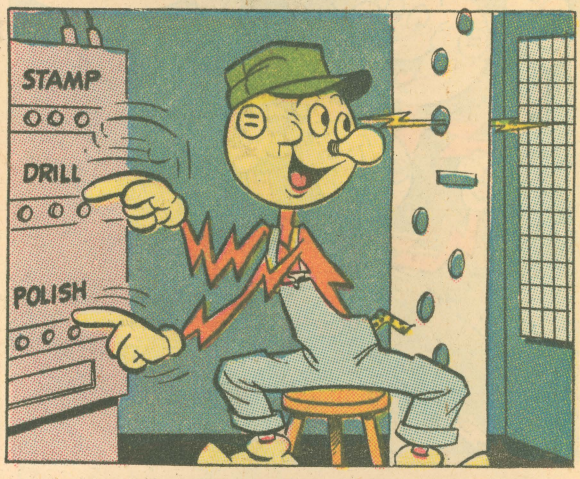

THE TRANSFORMER CHANGES ME TO THE RIGHT VOLTAGE!


I MUST BE THE RIGHT SIZE AND STRENGTH TO DO MY BEST WORK...
YES SIR, I'M NEEDED FOR ALL KINDS OF JOBS ALL OVER THE COUNTRY. FACTORY JOBS FOR INSTANCE...
IT TAKES PLENTY OF ELECTRONIC SPINACH TO WORK THIS 20-TON PRESS!
THEN, THERE ARE JOBS WHERE SPEED AND ACCURACY COUNT.
THERE'S PLENTY OF WORK FOR ME EVEN HERE INSIDE THIS LATHE MOTOR.

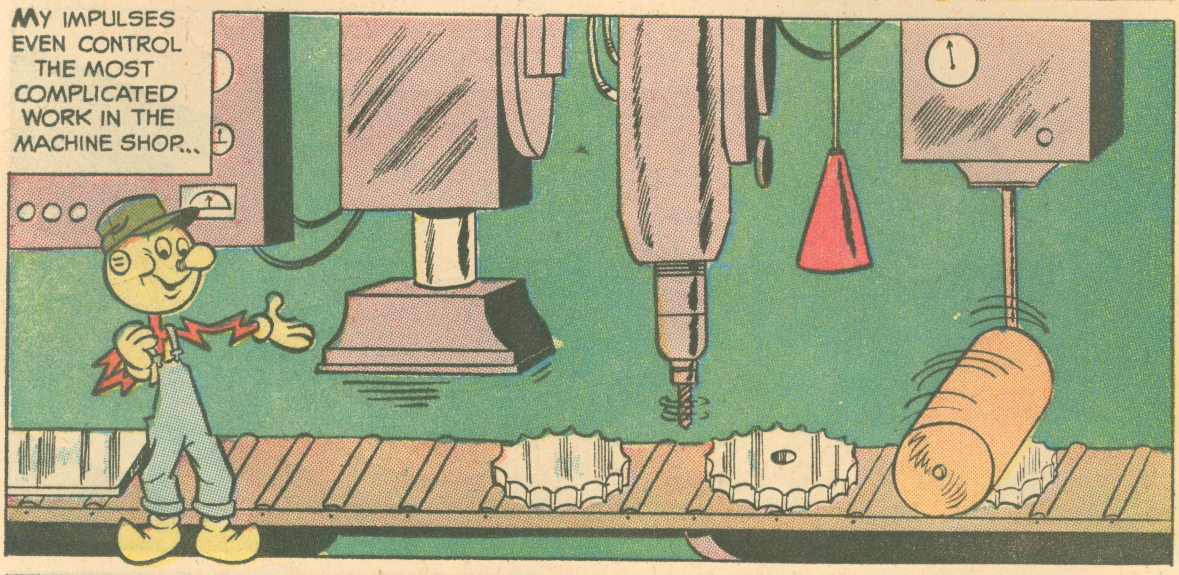
IN SOME MACHINES THEY USE ME TO CONTROL COMPLEX OPERATIONS BY MEANS OF A PUNCHED TAPE...

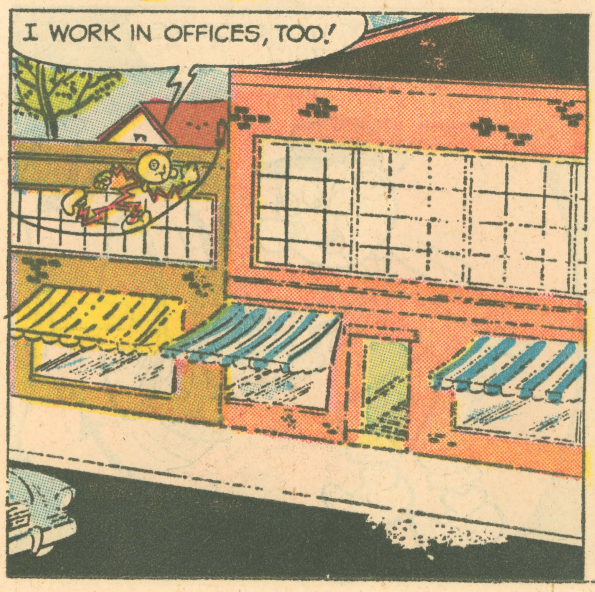


INSIDE THE MACHINE MY ELECTRONIC BRAIN USES THE TAPE TO GUIDE THE WORK INSIDE THE FACTORY PRODUCTION LINES...



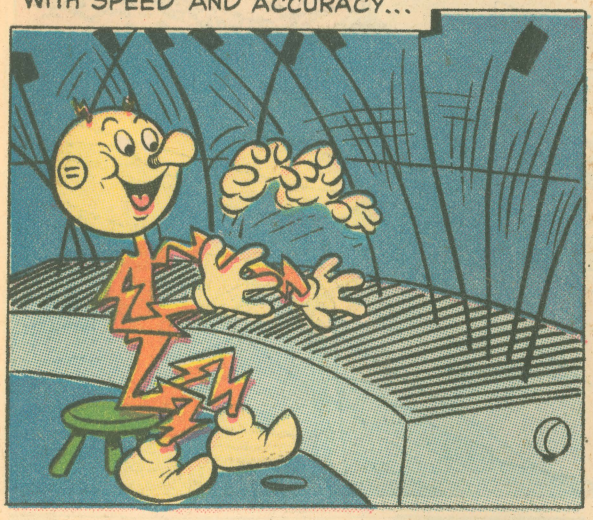
MY IMPULSES EVEN CONTROL THE MOST COMPLICATED WORK IN THE MACHINE SHOP...

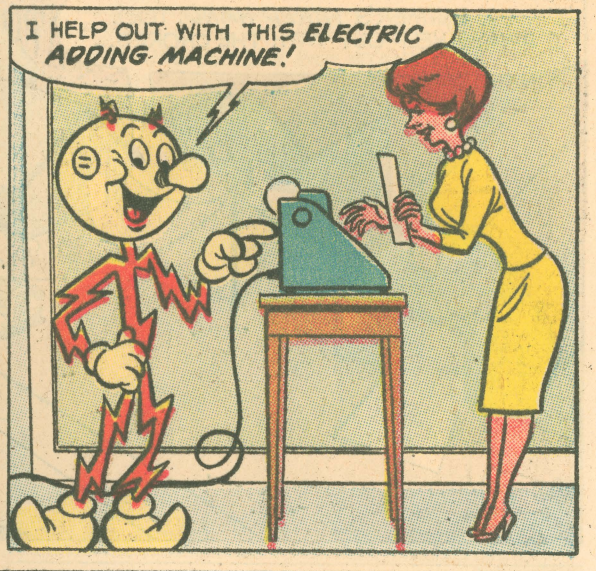


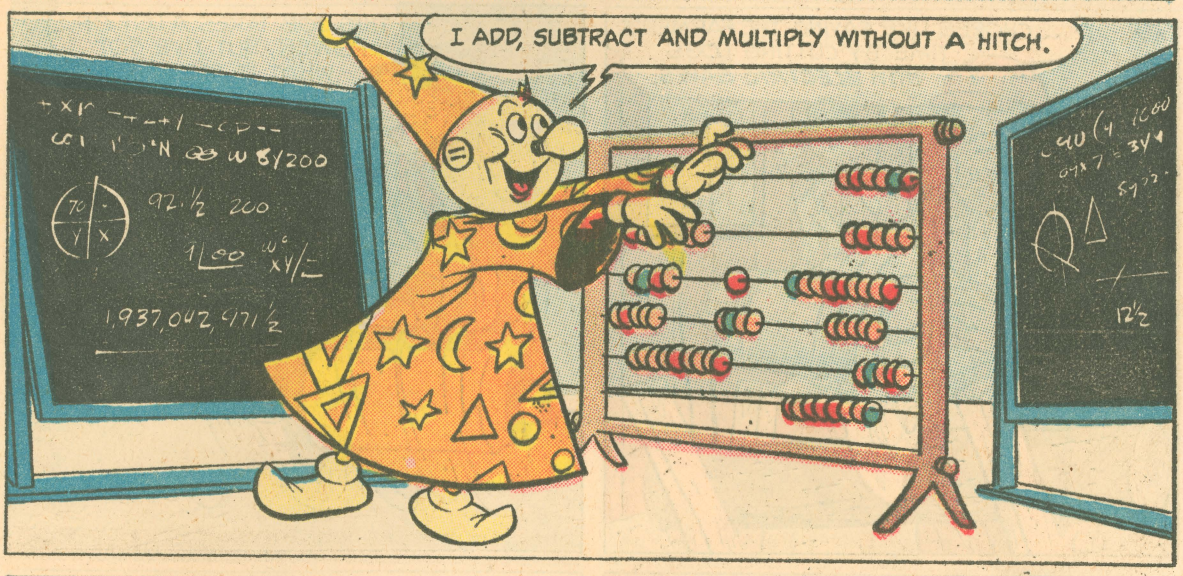


YES SIR, FOLKS, I'M WHITE-COLLAR REDDY AND I HELP MAKE OFFICE TASKS EASIER... LIKE TYPING BUSINESS CORRESPONDENCE WITH AN ELECTRIC TYPEWRITER.

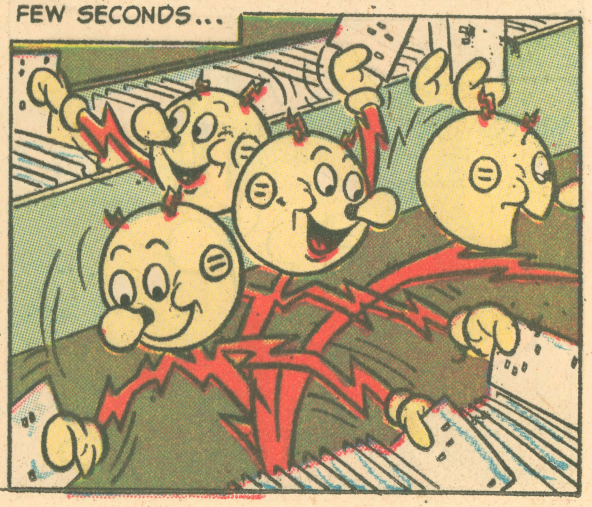
WITH REDDY TO HELP, THE TYPING IS DONE WITH SPEED AND ACCURACY...

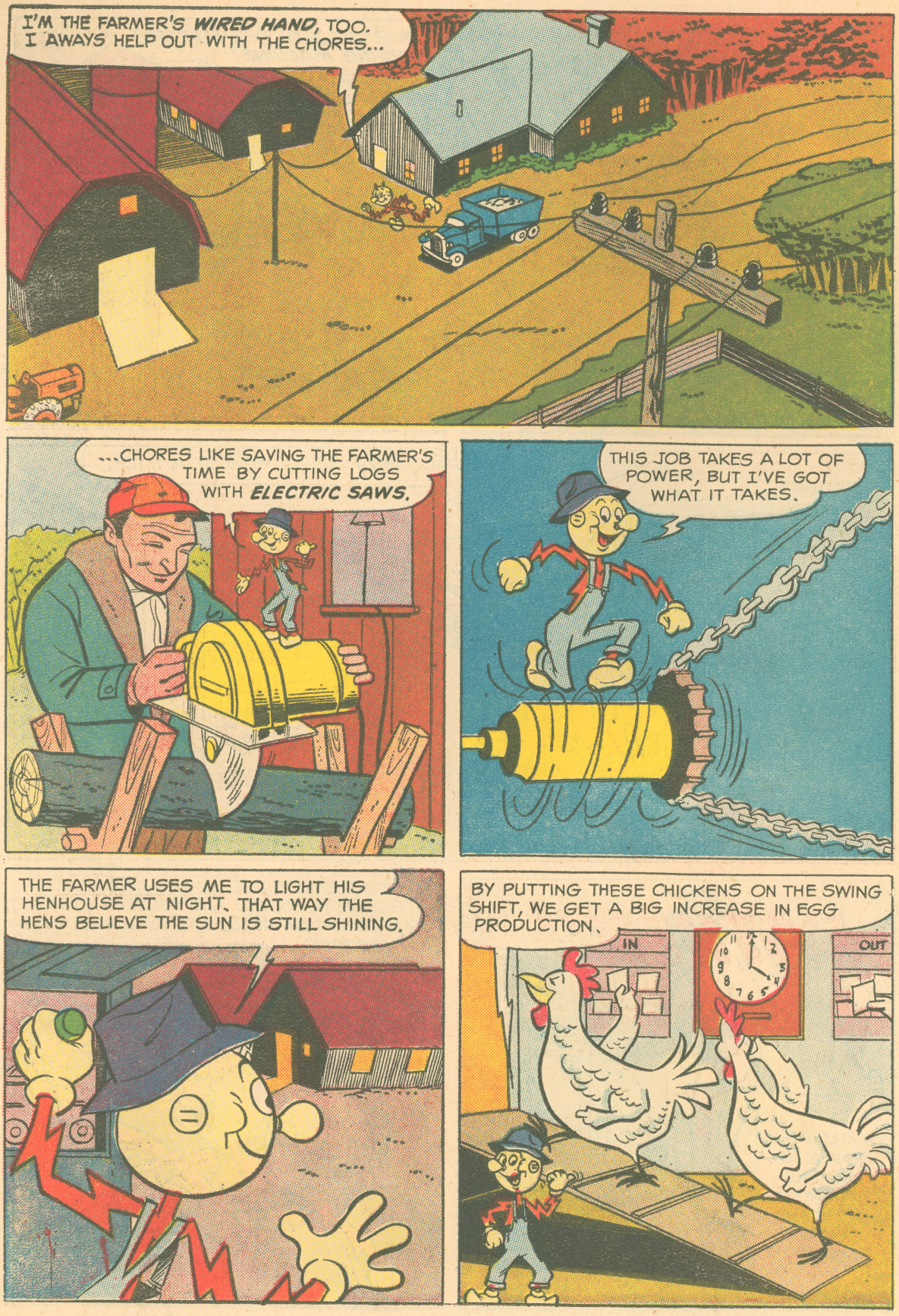


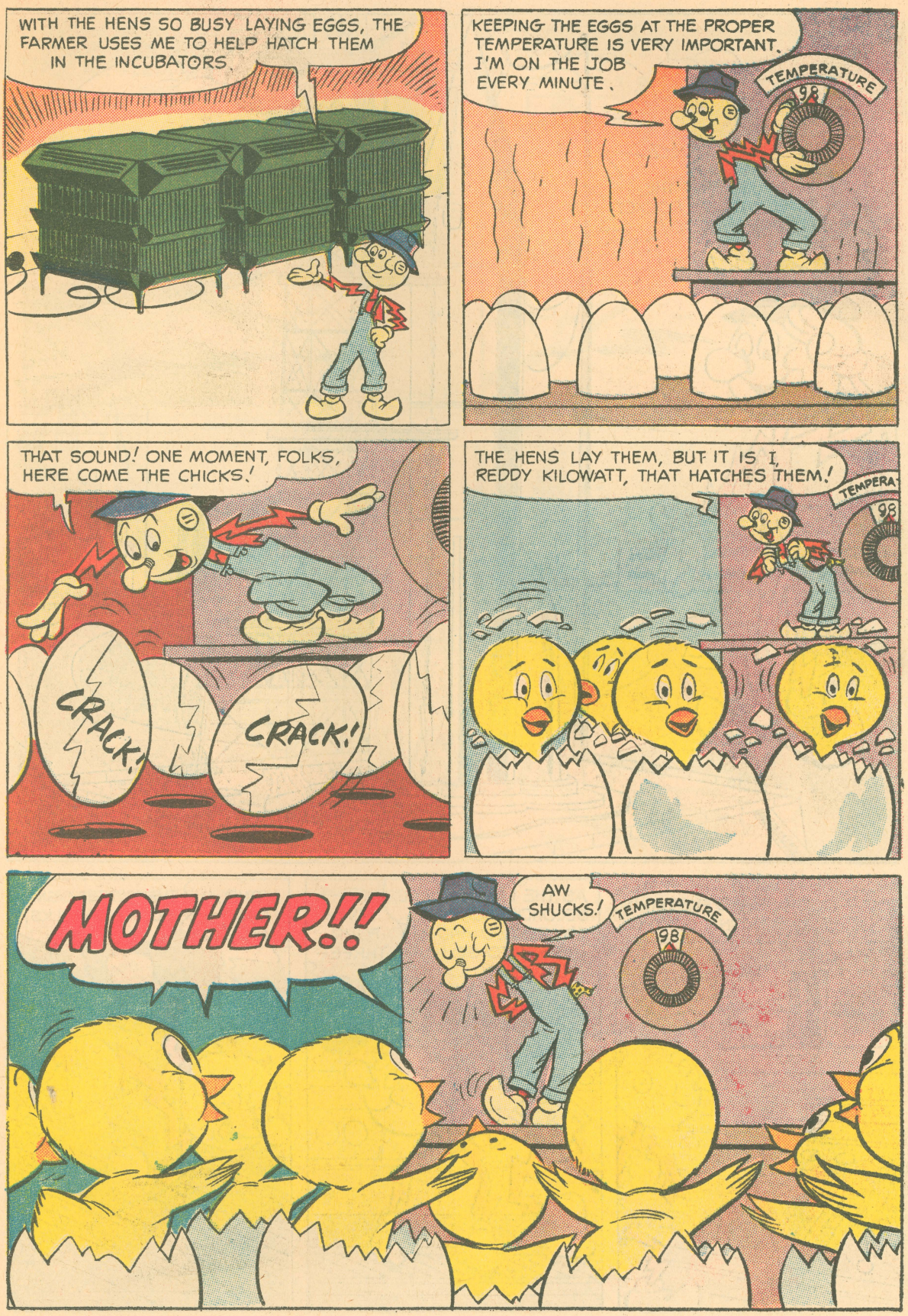


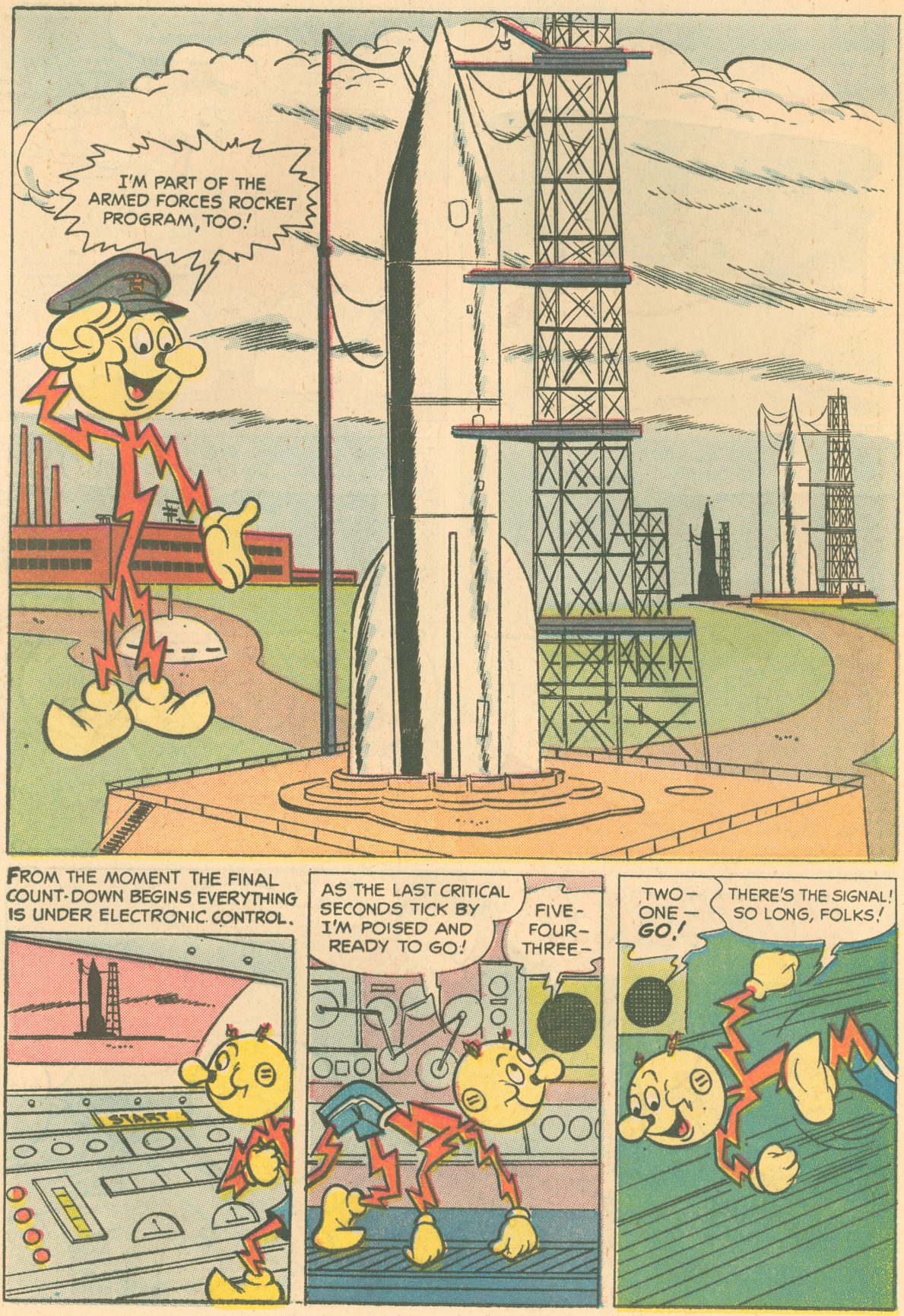


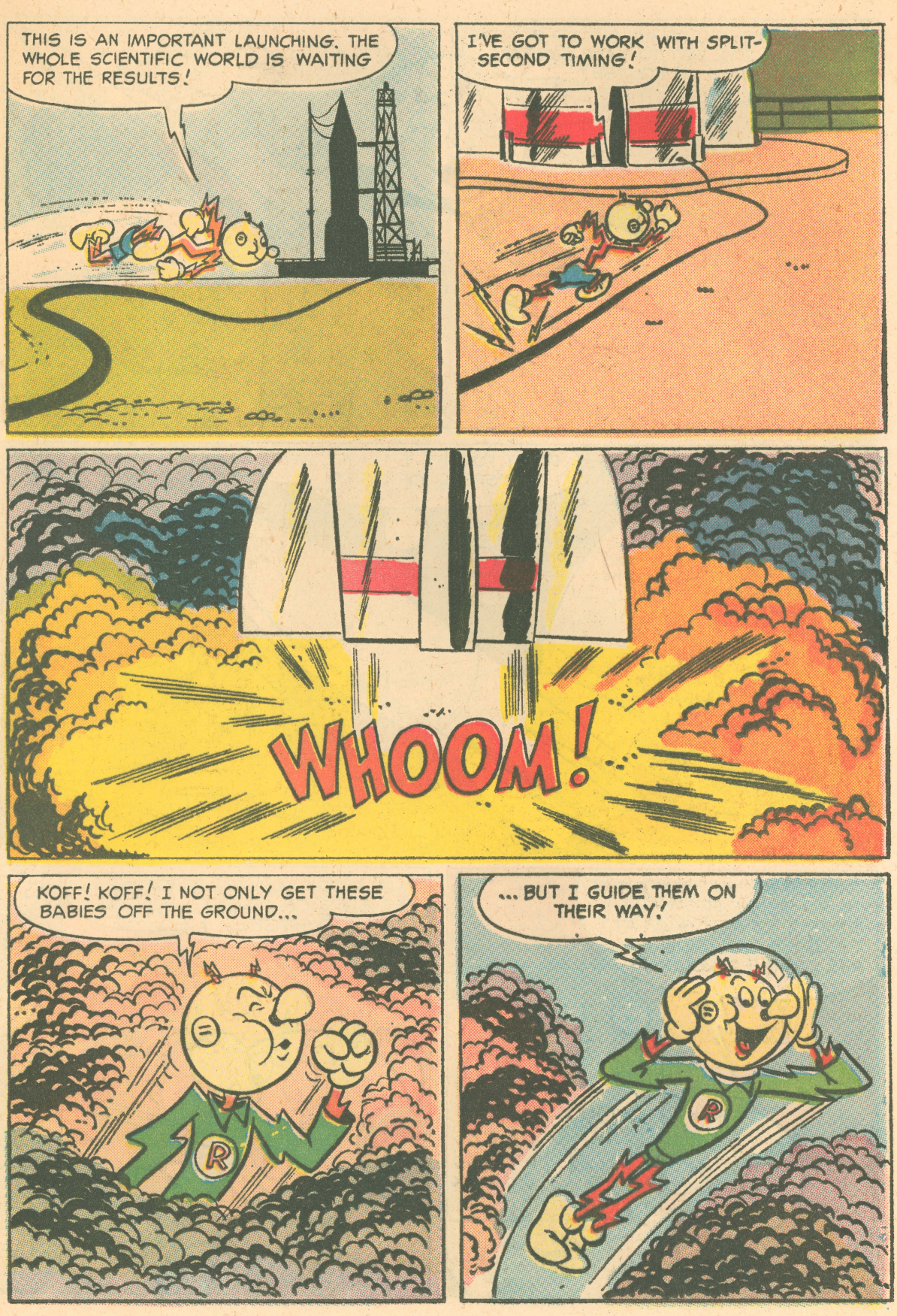
GREAT INDUSTRIES USE THESE MACHINES TO KEEP THEIR ACCOUNTS AND RECORDS STRAIGHT. ANY INFORMATION NEEDED IS AVAILABLE IN A FEW SECONDS...

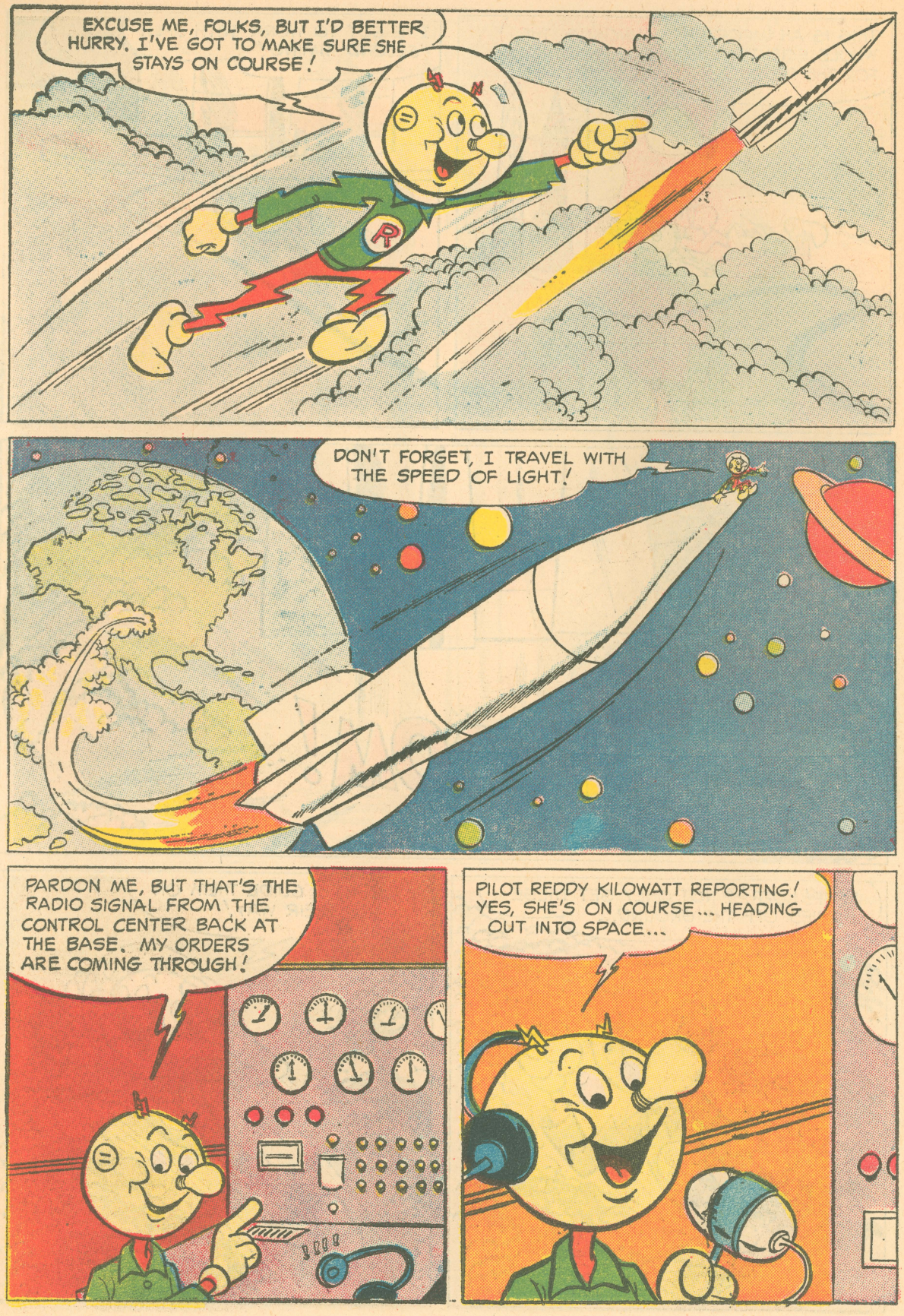


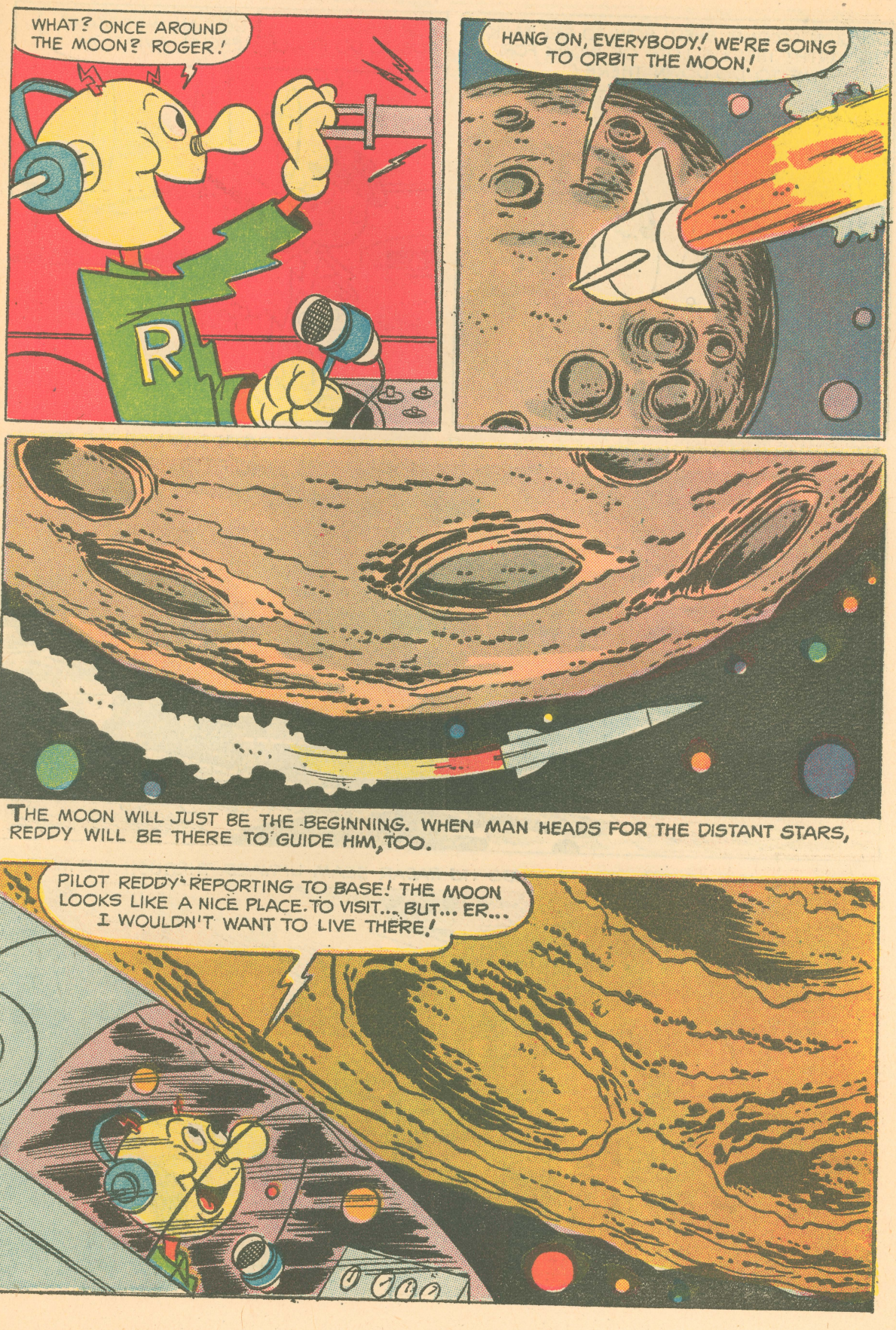

I'M THE FARMER'S WIRED HAND, TOO. I AWAYS HELP OUT WITH THE CHORES...
...CHORES LIKE SAVING THE FARMER'S TIME BY CUTTING LOGS WITH ELECTRIC SAWS.
THIS JOB TAKES A LOT OF POWER, BUT I'VE GOT WHAT IT TAKES.
THE FARMER USES ME TO LIGHT HIS HENHOUSE AT NIGHT. THAT WAY THE HENS BELIEVE THE SUN IS STILL SHINING.
BY PUTTING THESE CHICKENS ON THE SWING SHIFT, WE GET A BIG INCREASE IN EGG PRODUCTION.
IN
OUT

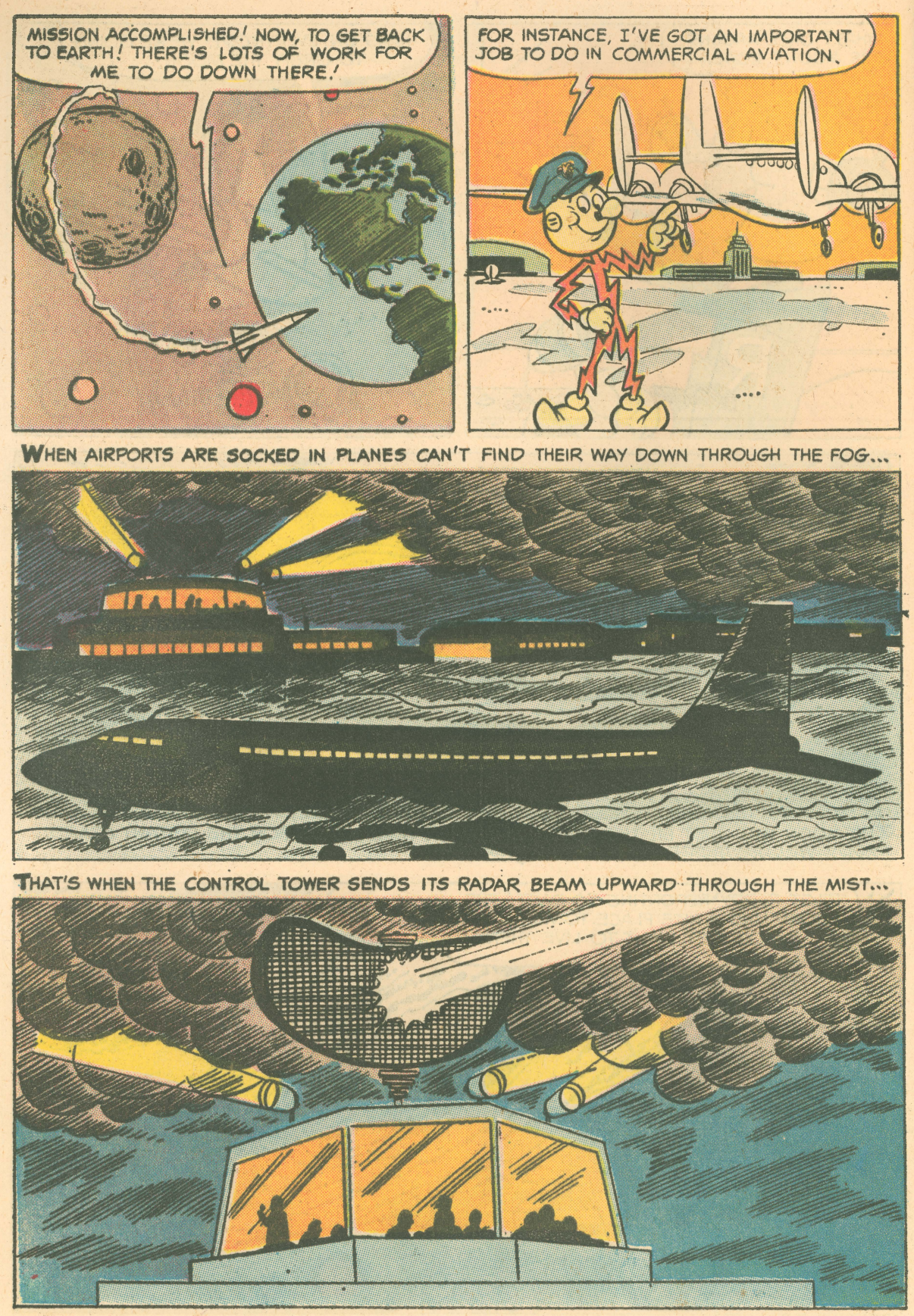

WITH THE HENS SO BUSY LAYING EGGS, THE FARMER USES ME TO HELP HATCH THEM IN THE INCUBATORS.
KEEPING THE EGGS AT THE PROPER TEMPERATURE IS VERY IMPORTANT. I'M ON THE JOB EVERY MINUTE.
TEMPERATURE
98
THAT SOUND! ONE MOMENT, FOLKS, HERE COME THE CHICKS!
CRACK!
CRACK!
THE HENS LAY THEM, BUT IT IS I, REDDY KILOWATT, THAT HATCHES THEM!
TEMPERA
98
MOTHER!!
AW SHUCKS!
TEMPERATURE
98

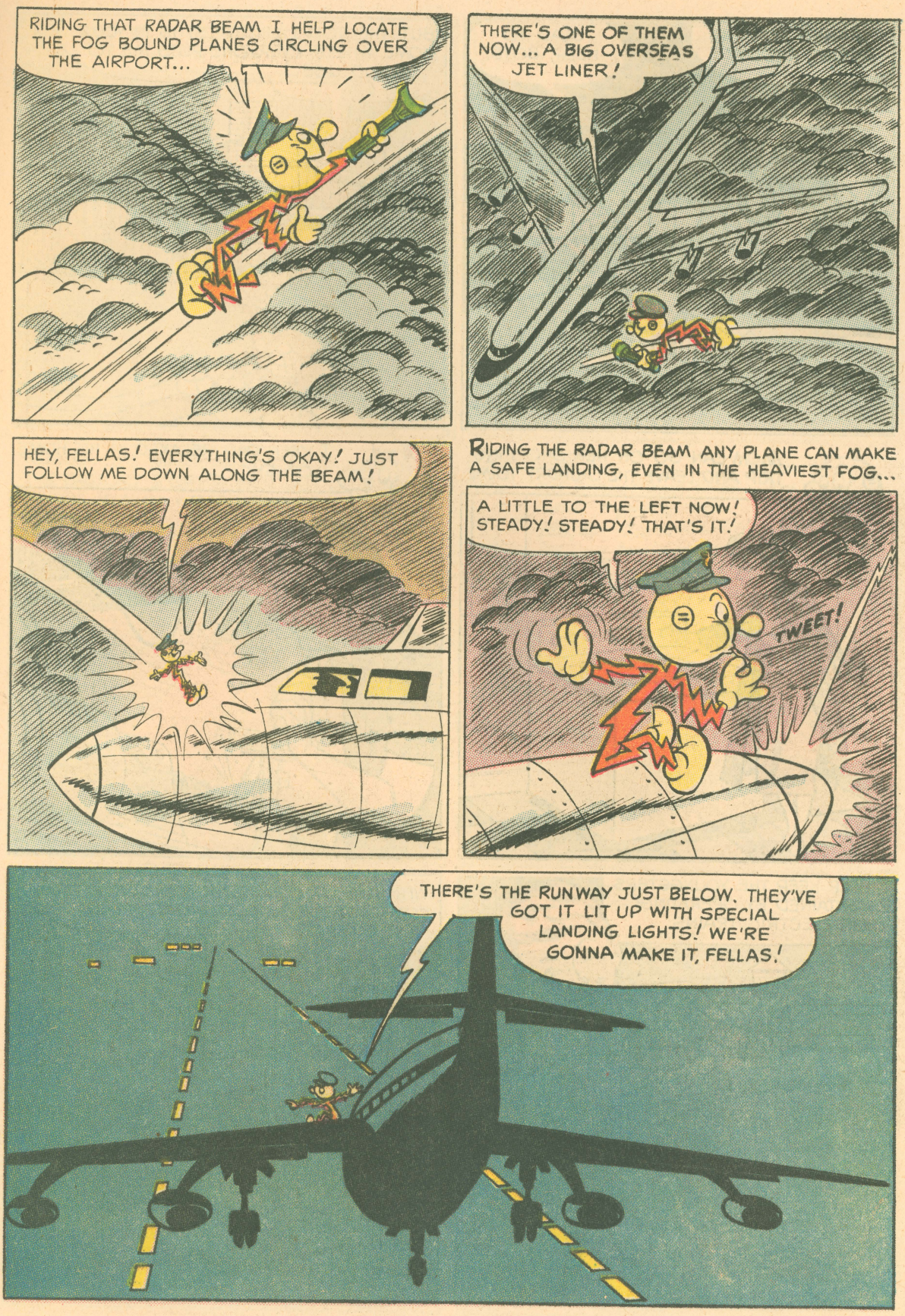

I'M PART OF THE ARMED FORCES ROCKET PROGRAM, TOO!
FROM THE MOMENT THE FINAL COUNT-DOWN BEGINS EVERYTHING IS UNDER ELECTRONIC CONTROL.
START
AS THE LAST CRITICAL SECONDS TICK BY I'M POISED AND READY TO GO!
FIVE-FOUR-THREE-
TWO-ONE-GO!
THERE'S THE SIGNAL! SO LONG, FOLKS!

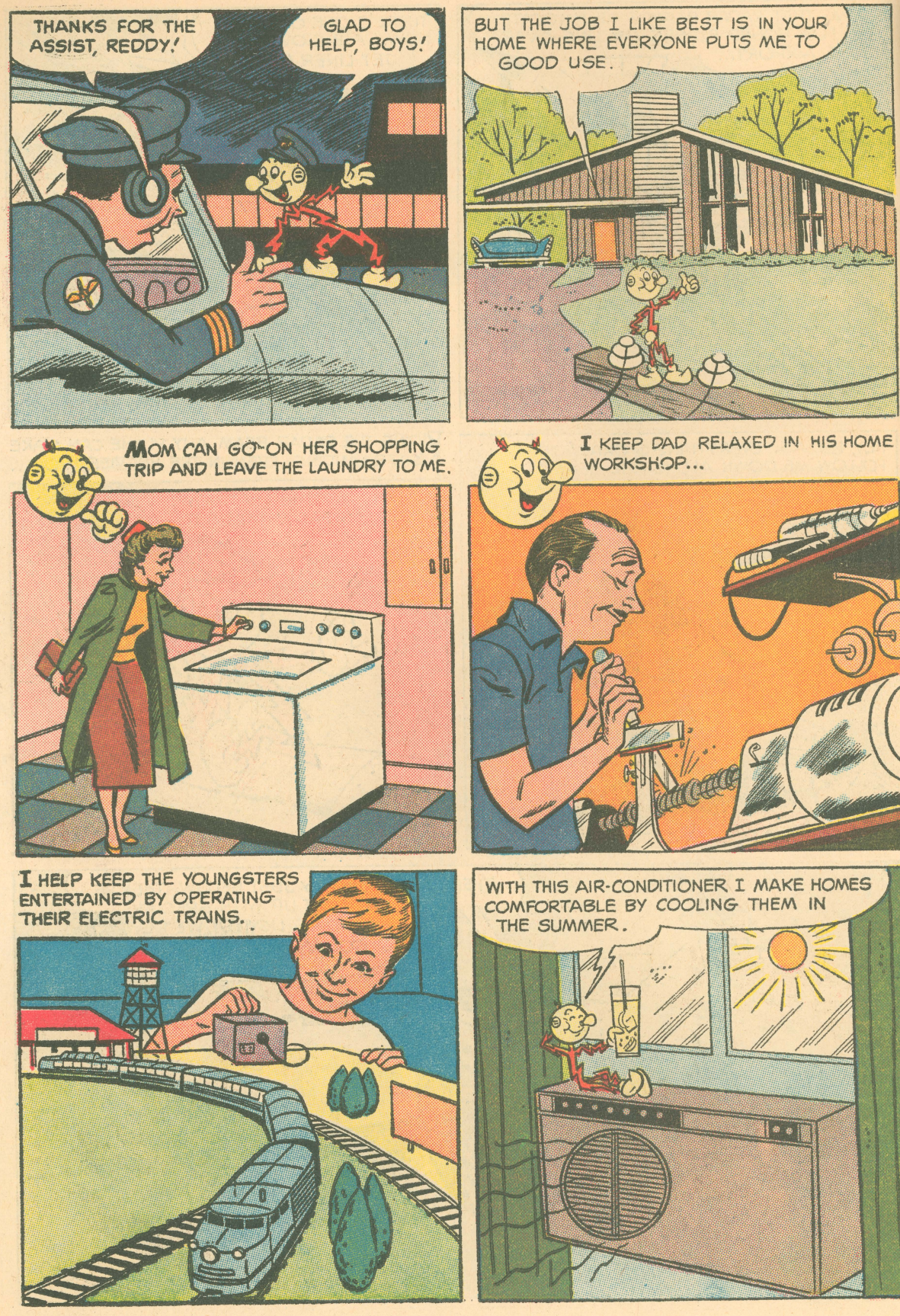

THIS IS AN IMPORTANT LAUNCHING. THE WHOLE SCIENTIFIC WORLD IS WAITING FOR THE RESULTS!
I'VE GOT TO WORK WITH SPLIT-SECOND TIMING!
WHOOM!
KOFF! KOFF! I NOT ONLY GET THESE BABIES OFF THE GROUND...
... BUT I GUIDE THEM ON THEIR WAY!

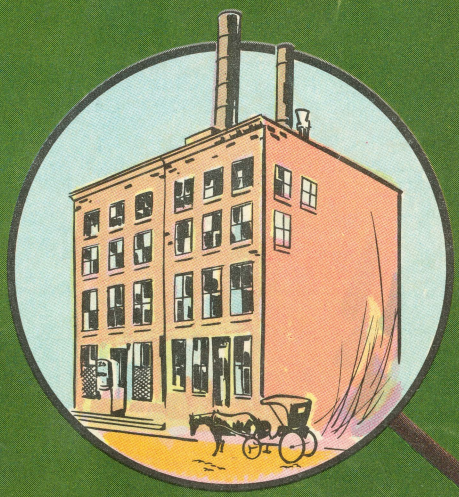

EXCUSE ME, FOLKS, BUT I'D BETTER HURRY. I'VE GOT TO MAKE SURE SHE STAYS ON COURSE!
DON'T FORGET, I TRAVEL WITH THE SPEED OF LIGHT!
PARDON ME, BUT THAT'S THE RADIO SIGNAL FROM THE CONTROL CENTER BACK AT THE BASE. MY ORDERS ARE COMING THROUGH!
PILOT REDDY KILOWATT REPORTING! YES, SHE'S ON COURSE... HEADING OUT INTO SPACE...


WHAT? ONCE AROUND THE MOON? ROGER!
R
HANG ON, EVERYBODY! WE'RE GOING TO ORBIT THE MOON!
THE MOON WILL JUST BE THE BEGINNING. WHEN MAN HEADS FOR THE DISTANT STARS, REDDY WILL BE THERE TO GUIDE HIM, TOO.
PILOT REDDY REPORTING TO BASE! THE MOON LOOKS LIKE A NICE PLACE TO VISIT... BUT... ER... I WOULDN'T WANT TO LIVE THERE!

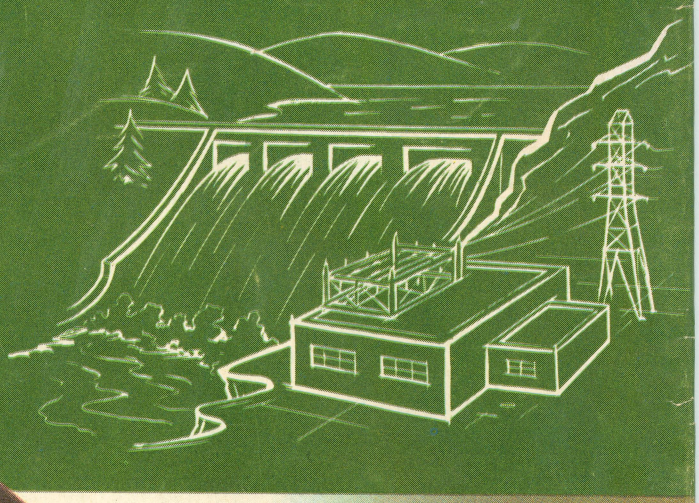

MISSION ACCOMPLISHED! NOW, TO GET BACK TO EARTH! THERE'S LOTS OF WORK FOR ME TO DO DOWN THERE!
FOR INSTANCE, I'VE GOT AN IMPORTANT JOB TO DO IN COMMERCIAL AVIATION.
WHEN AIRPORTS ARE SOCKED IN PLANES CAN'T FIND THEIR WAY DOWN THROUGH THE FOG...
THAT'S WHEN THE CONTROL TOWER SENDS ITS RADAR BEAM UPWARD THROUGH THE MIST...


RIDING THAT RADAR BEAM I HELP LOCATE THE FOG BOUND PLANES CIRCLING OVER THE AIRPORT...
THERE'S ONE OF THEM NOW... A BIG OVERSEAS JET LINER!
HEY, FELLAS! EVERYTHING'S OKAY! JUST FOLLOW ME DOWN ALONG THE BEAM!
RIDING THE RADAR BEAM ANY PLANE CAN MAKE A SAFE LANDING, EVEN IN THE HEAVIEST FOG...
A LITTLE TO THE LEFT NOW! STEADY! STEADY! THAT'S IT!
TWEET!
THERE'S THE RUNWAY JUST BELOW. THEY'VE GOT IT LIT UP WITH SPECIAL LANDING LIGHTS! WE'RE GONNA MAKE IT, FELLAS!

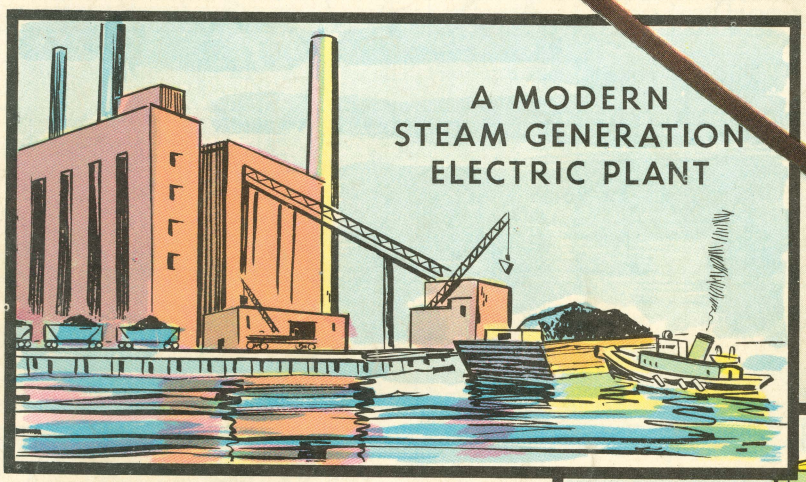

THANKS FOR THE ASSIST, REDDY!
GLAD TO HELP, BOYS!
BUT THE JOB I LIKE BEST IS IN YOUR HOME WHERE EVERYONE PUTS ME TO GOOD USE.
MOM CAN GO ON HER SHOPPING TRIP AND LEAVE THE LAUNDRY TO ME.
I KEEP DAD RELAXED IN HIS HOME WORKSHOP...
I HELP KEEP THE YOUNGSTERS ENTERTAINED BY OPERATING THEIR ELECTRIC TRAINS.
WITH THIS AIR-CONDITIONER I MAKE HOMES COMFORTABLE BY COOLING THEM IN THE SUMMER.



EDISON'S FIRST PLANT 1882

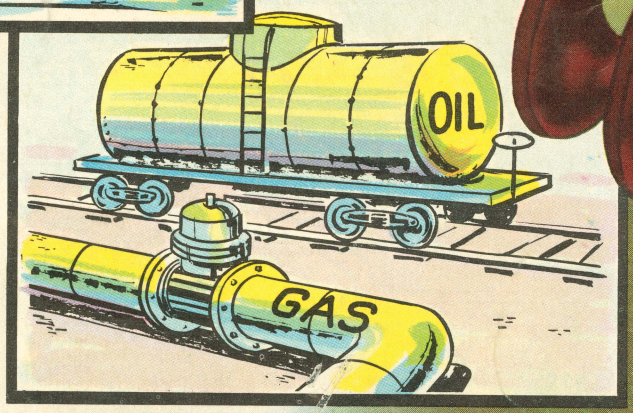


A MODERN HYDRO PLANT



USING COAL FOR FUEL

TODAY'S ELECTRIC PLANTS
ARE HELPING PEOPLE
LIVE BETTER
THAN EVER BEFORE.



OIL AND GAS ARE ALSO USED FOR FUEL